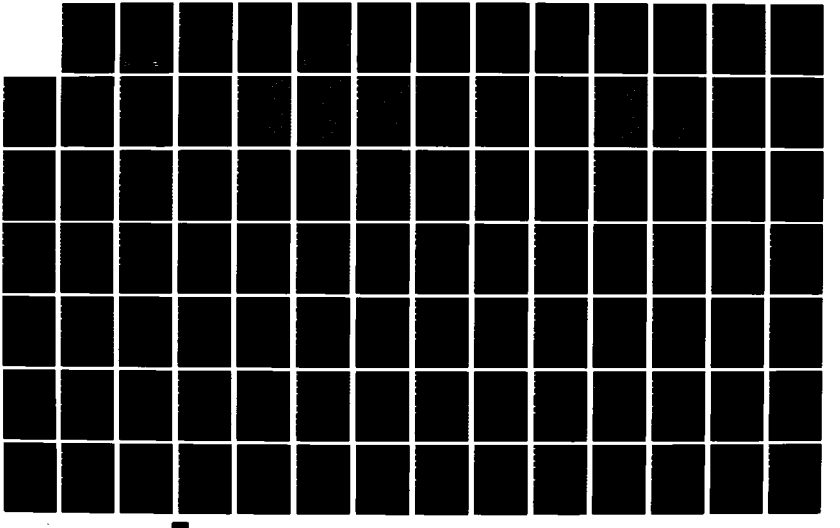
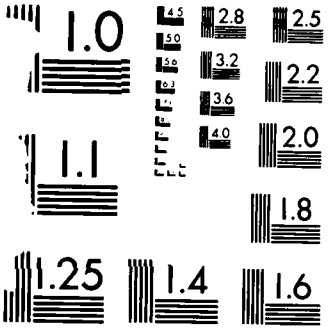
AD-A165 213 CHARACTERIZATION OF MERO-AND ICHTHYOPLANKTON COMMUNITIES WITHIN THE CHESA..(U) OLD DOMINION UNIV NORFOLK VA APPLIED MARINE RESEARCH LAB A J BUTT ET AL. 1/3

UNCLASSIFIED MAR 85 DACW65-81-C-0051 FFG 6/6 NL





APPLIED MARINE RESEARCH LABORATORY
OLD DOMINION UNIVERSITY
NORFOLK, VIRGINIA

CHARACTERIZATION OF MERO- AND ICHTHYOPLANKTON COMMUNITIES WITHIN THE CHESAPEAKE BAY PLUME OFF VIRGINIA BEACH, VIRGINIA DURING 1983-1984

By

Arthur J. Butt and Raymond W. Alden III

Final Report
For Period Ending December 1984

Prepared for the
Department of the Army
Norfolk District, Corps of Engineers
Fort Norfolk, 803 Front Street
Norfolk, Virginia 23510

Under
Contract DACW65-81-C-0051
Work Order Nos. 19 & 23

March 1985

Report B- 48

REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION Unclassified	1b. RESTRICTIVE MARKINGS
2a. SECURITY CLASSIFICATION AUTHORITY	3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release, distribution unlimited.
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE	
4. PERFORMING ORGANIZATION REPORT NUMBER(S)	5. MONITORING ORGANIZATION REPORT NUMBER(S) B-48
6a. NAME OF PERFORMING ORGANIZATION Old Dominion University Applied Marine Research Laboratory 6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORGANIZATION U.S. Army Corps of Engineers, Norfolk District
6c. ADDRESS (City, State, and ZIP Code) Norfolk, VA 23508	7b. ADDRESS (City, State, and ZIP Code) Norfolk, Virginia 23510-1096
8a. NAME OF FUNDING/SPONSORING ORGANIZATION U.S. Army Corps of Engineers, Norfolk District 8b. OFFICE SYMBOL (If applicable) NAOPL; NAOEN	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER DACW65-81-C-0051
8c. ADDRESS (City, State, and ZIP Code) Norfolk, Virginia 23510-1096	10. SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO. / PROJECT NO. / TASK NO. / WORK UNIT ACCESSION NO

11. TITLE (Include Security Classification)
Characterization of Mero- and Icthyoplankton Communities Within the Chesapeake Bay Plume Off Virginia Beach, Virginia During 1983-1984

12. PERSONAL AUTHOR(S)
Butt, A.J., and R.W. Alden,III

13a. TYPE OF REPORT	13b. TIME COVERED	14. DATE OF REPORT (Year, Month, Day)	15. PAGE COUNT
Final	FROM _____ TO _____	1985, March	214

16. SUPPLEMENTARY NOTATION

17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	Chesapeake Bay plume, meroplankton, icthyoplankton, spatial distribution, temporal distribution, Dam Neck Disposal Site commercial fisheries, recreational fisheries, multiple re-

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

Conclusion of report is that DNDS does not appear to represent a major larval transport rou for any but tht most common and commercially insignificant species (e.g. sand shrimp, Bay anchovies, gastropods, and hermit crabs). The only possible exception would be the blue cr megalopae found in the neuston in the center of the study area. This population represent only a small portion of the recruitment stock in the Bay. Previous studies have documented equal or greater concentrations of megalopae offshore. Blue crab zoea found in greatest numbers offshore of DNDS.

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT	21. ABSTRACT SECURITY CLASSIFICATION
☐ UNCLASSIFIED/UNLIMITED ☒ SAME AS RPT. ☐ DTIC USERS	Unclassified
22a. NAME OF RESPONSIBLE INDIVIDUAL Craig L. Seltzer	22b. TELEPHONE (Include Area Code) (804) 441-3767/827-3767 22c. OFFICE SYMBOL NAOPL-R

DD FORM 1473, 84 MAR 83 APR edition may be used until exhausted. All other editions are obsolete.

18. gression analysis, abundance data

APPLIED MARINE RESEARCH LABORATORY
OLD DOMINION UNIVERSITY
NORFOLK, VIRGINIA

CHARACTERIZATION OF MERO- AND ICHTHYOPLANKTON COMMUNITIES WITHIN THE CHESAPEAKE BAY PLUME OFF VIRGINIA BEACH, VIRGINIA DURING 1983-1984

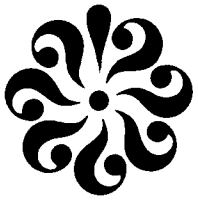
By

Arthur J. Butt and Raymond W. Alden III

Final Report
For Period Ending December 1984

Prepared for the
Department of the Army
Norfolk District, Corps of Engineers
Fort Norfolk, 803 Front Street
Norfolk, Virginia 23510

Under
Contract DACW65-81-C-0051
Work Order Nos. 19 & 23



Submitted by the
Old Dominion University Research Foundation
P. O. Box 6369
Norfolk, Virginia 23508

March 1985

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF FIGURES
(Continued)

CHARACTERIZATION OF MERO- AND ICHTHYOPLANKTON COMMUNITIES WITHIN THE CHESAPEAKE BAY PLUME OFF VIRGINIA BEACH, VIRGINIA DURING 1983-1984

By

Arthur J. Butt* and Raymond W. Alden III**

INTRODUCTION

The coastal zone has long been a source of sustenance for the human community. Because of its aesthetic and economic value there has occurred a continual ingress to this dynamic, yet finite area. The coastal zone with its dendritic estuaries serve as suitable habitat for innumerable aquatic species, many of which serve as recreational and commercial resources. However, as urbanization encroaches along the coastline, the pending impact of human activities on these valuable resources must be monitored.

A vital component of the routine operations around most coastal harbors and embayments is the maintenance dredging of navigational channels. Associated with this particular operation is the need for adequate disposal site. Recently, questions have been raised concerning the potential impact of dredged material disposal on the aquatic resources, in particular the plankton community. Unfortunately, there is a paucity of information re-

*Manager, Applied Marine Research Laboratory, Old Dominion University, Norfolk, VA.

**Director, Applied Marine Research Laboratory, Old Dominion University, Norfolk, VA.

lated specifically to this topic (Bell, 1973; Thompson, 1973; Hoss et al., 1974; DeCoursey and Vernberg, 1975). A review of information on the general composition, abundance and seasonality of zooplankton along much of the coastal zone is also lacking. Coastal zooplankton ecology has been studied along the Southeastern United States specifically from Cape Hatteras south to Florida (see reviews by Roberts, 1974; and Alden, 1977). Most of the studies focused on Gulf Stream communities off Florida; however, it is recognized that many of those zooplankton communities are distributed along the entire southeastern coastline. A distinct faunal divergence occurs at Cape Hatteras. The warmer Gulf stream waters flow offshore at the Cape and a cooler water faunal assemble is reported to the north.

Recent zooplankton studies off the Mid-Atlantic Bight are generally lacking (see review by Jeffries and Johnson, 1973). The bulk of the information deals with a few taxonomic groups limited to the fringing bays and sound. Despite its economical and military importance, Chesapeake Bay and its adjacent coastal waters has received relatively little attention (see review by Butt et al., 1985). In general, the studies show domination of the zooplankton community by a few major forms, particularly the holoplankters. Meroplankton studies in the Bay have been minimal and limited to individual species, their life cycles, distribution or general ecology. Information on detailed community structures, abundance and seasonality of meroplankton is basically absent.

Tidal fluctuations in the Bay and the corresponding Bay plume could dramatically affect larval distribution and recruitment patterns. It has been inferred that estuarine circulations

may determine the rate at which plankton populations must reproduce (Ketchum, 1954). The Chesapeake Bay supports a large species diversity that includes several major commercial and recreational fisheries. Therefore, transport mechanisms of commercially and ecologically important species need to be investigated.

The present study was designed to examine the spatial and temporal distribution patterns of important meroplankton in the waters off Virginia Beach, VA. The southern portion of the study area encompassed the Dam Neck Disposal Site (DNDS).

METHODS

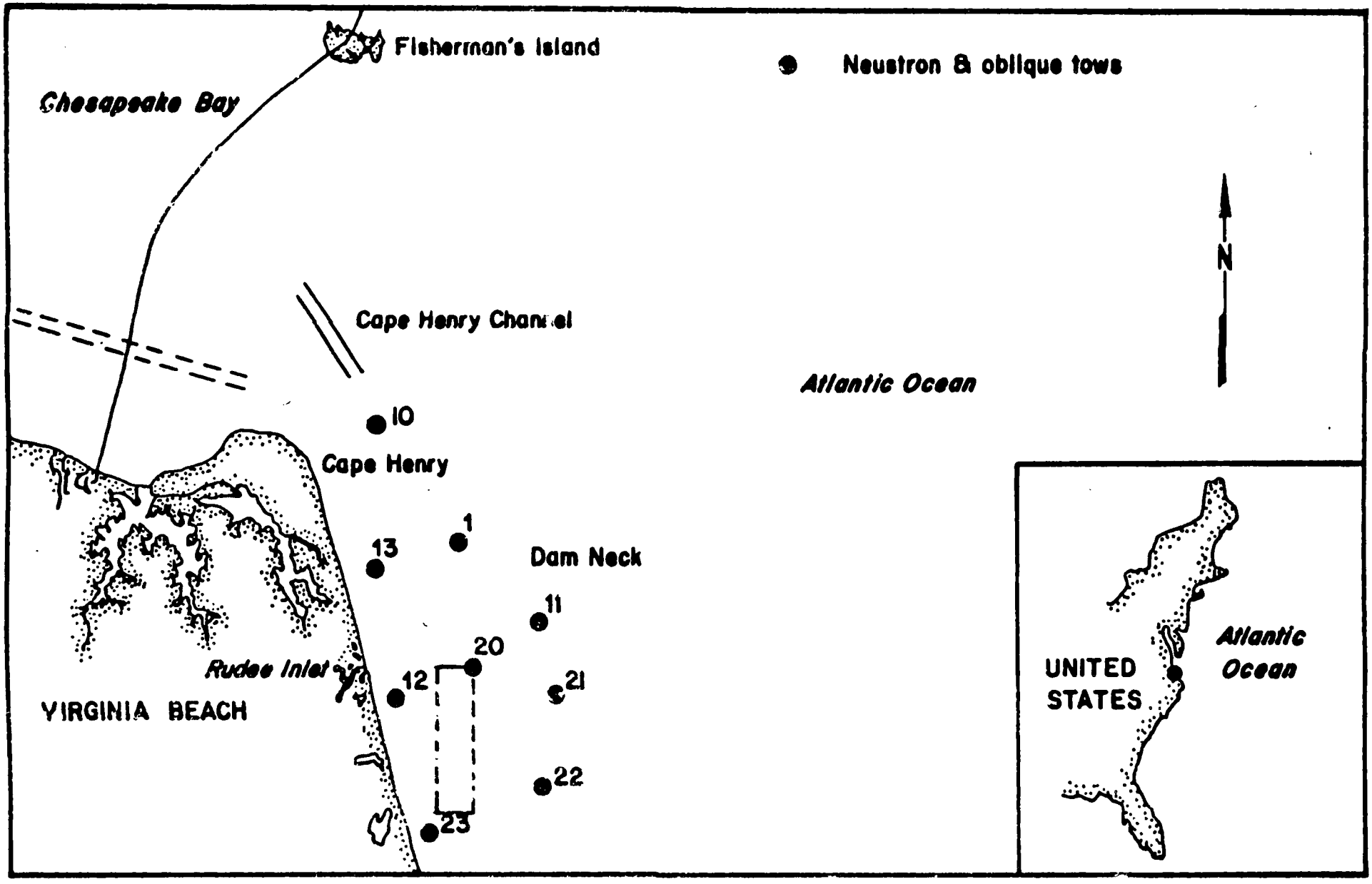
Study Area

The study was conducted between the 30 and 60 ft (9-18 m) contour lines, extending the mouth of Chesapeake Bay and southward along the coast. Virtually all the freshwater inflow to the study area is from the Bay. The outflow from Chesapeake Bay flows towards the south and joins with the southerly drift of shelf water along the Mid-Atlantic Bight. A clockwise eddy is reported along the inshore waters south of Cape Henry (Brehmer, 1971). There is a slight northerly flow of inshore bottom waters during the summer months. This long-shore drift is believed to begin as far south as False Cape. A strong density stratification is identified in the area, particularly during the warmer months. The low salinity surface water is characterized as part of the Bay plume that is strongly influenced by prevailing winds. An onshore and offshore surface transport of water off Rudee Inlet is reported during daily and/or seasonal trends. A detailed description of the water quality and physical parameters are presented by Alden and Butt (1985a,b).

Sampling Regime

Nine stations were monitored during the study period (Fig. 1). Five of the stations (1, 10, 11, 12 and 13) were positioned in a fan-shaped pattern to sample inshore waters and the water mass associated with the Bay plume. Zooplankton samples were collected monthly during the winter (October, 1983 - April, 1984) and semi-monthly during the summer months (May - September, 1984).

Figure 1. Study area off Virginia Beach, Virginia



A second sampling regime was begun in May (1984). Four additional stations were selected adjacent to the Dam Neck Disposal Site (Stations 20, 21, 22 and 23) (Fig. 1). Due to navigational restrictions in the study area, certain stations were located to adjust for navigational regulations (see Notice to Mariners, area 204.52 on NOAA chart 12207), yet allow for the acquisition of an extensive data base.

Plankton tows were collected with oblique bongo tows. Bongo nets (353μ micron mesh) were towed in duplicate from approximately one meter above the bottom to the surface. The sea surface was sampled with a one-meter neuston net (353 μ micron mesh). Four neuston tows were made per station for five minutes each. Mechanical flow meters were used in each net to calculate relative abundance per volume.

The zooplankton samples were fixed with 7% buffered formaldehyde and transported to the laboratory for sorting. The CVS subsampling method was employed using sieve fractions of 2000μ, 850μ, 600μ and 350μ (Alden et al., 1982). Identifications and enumerations of meroplankton and ichthyoplankton were made.

Statistical Analysis

The number of taxonomic groups to be evaluated was reduced by a computer program which accepted only groups which exceeded an abundance level of $10/m^3$ in at least 5% of the observations. The groups meeting these a priori criteria were considered "numerically important". Further data reduction was accomplished by a Principal Components Analysis (PCA) on the covariance matrix

of the reduced data set. A series of seasonal multiple regression analysis models were run on each of the major PCA factors to determine the significance of month to month effects (linear and non-linear), geographic effects (north to south; west to east), tow types effects (neuston vs. oblique) as well as all appropriate interactions. Similar models have been described in detail for water quality and dissolved oxygen patterns at DNDS (Alden and Butt, 1985a,b).

RESULTS

Meroplankton Communities

Over 240 species were observed in the meroplankton collections taken at DNDS (Table A1). Table A2 presents summary statistics for each taxonomic group found in any given tow type/station combination. The statistical parameters presented for each taxon include the average of all cruise means (i.e. grand mean for the site/tow type), the standard error of that value, the maximum mean abuandance value observed for the site/tow type, the percent occurrences, and the percent occurrences over $10/m^3$. The latter value was used as a selection criterion for data reduction.

It was decided to select only species that were either numerically or commercially important for a more detailed evaluation. Although the abundance and occurrence "filters" were somewhat arbitrary, direct examination of the data did not indicate that any "important" groups were excluded by these criteria.

Table A3 presents the taxonomic groups which were included as being "numerically imporant", along with information on the site/tow type combinations for which the criteria were met. The grand means for each site/tow type are presented again for comparison purposes. Twenty taxonomic groups met the criteria: bivalves veligers, fish eggs, **Callinectes sapidus** zoeae and megalopae, **Cancer irroratus** zoea, **Crangon septemspinosa** larvae, **Anchoa mitchilli** larvae, engraulid eggs, engraulid fry, gastropod veligers, larvaceans, **Lucifer faxoni**, **Mysidopsis bigelowi**, **Neomysis americana**, pagurid crab zoeae, phoronid larvae, pinnixid

crab zoeae, sciaenid eggs, *Uca* zoeae, and xanthid crab zoeae. It should be noted that some of the groups included were not truly meroplankton (e.g. the larvaceans, *Lucifer* shrimp, the mysids), but it was felt that the ecological role served by these groups may be trophically similar to many of the groups of the true meroplankton in terms of providing food for higher trophic levels (i.e. the body size and/or numbers of these groups make them potential food for juvenile fishes).

In addition to the numerically important groups, 15 groups believed to be of potential commercial importance to the region were added to the list for closer examination. These groups included: ***Cancer irroratus*** megalopąe, penaeid shrimp larvae, bothid eggs, other (unidentified) fish eggs, ***Bothus ocellatus*** larvae, ***Etropus microstomus*** larvae, ***Paralichthys dentalus*** larvae, ***Scophthalmus aquosus*** larvae, ***Trinectes maculatus*** larvae, ***Cynoscion regalis*** larvae, ***Leiostomus xanthurus*** larvae, ***Micropogonias unadulatus***, ***Pomatomus saltatrix*** larvae, ***Ammodytes hexapterus*** larvae (because of the importance of this species as food for fish in the region), and ***Brevoortia tyrranus*** larvae.

Table A4 presents the data for these important taxonomic groups of the study area. For presentation purposes, the groups were assembled so that similar groups would be found on the same pages. The means and standard errors are presented only for cruises where there was at least one non-zero abundance value. This convention was adopted so that many pages of zeros would not have to be shown in the Table. Figs. A1 to A62 present the mean abundance of the groups found at the various sites over time for

both the oblique and neuston tows.

The blue crab **Callinectes sapidus** larvae clearly dominate all other forms when looking at the abundance patterns for commercial crustaceans. The grand mean abundance value for **C. sapidus** zoeae for all cruises, stations and tow types was approximately 15/m^3 (see Fig. 2 for station and monthly trends). The values for other crustaceans were generally less than 1/m^3. The **C. sapidus** zoeae appeared in late May and peaked in the neuston collections in June and July (Table A4; Figs. A1 and A2). Peak abundances for early stage zoeae (<600 microns) in neuston collections were taken from Station 10 in June and early July and from Stations 1, 20 and 22 by late July (Fig. A1). The zoeae from the oblique collections were found in maximum abundance at Stations 11, 21, 20, 22, and 1 in August (Fig. A2). The maximum abundance for **C. sapidus** megalopae was observed in neuston collections made at Station 20 ($\bar{x}$=162/m^3) and Station 11 ($\bar{x}$=14/m^3) in late September (Fig. A3). Lower levels of megalopae were also observed in the neuston tows from nearby stations (e.g. Stations 12, 23). (See Fig. 3 for station and monthly trends).

The rock crab zoeae **Cancer irroratus** were found in greatest abundance in the oblique tows rather than the neuston collections. This suggests that they are found somewhat lower in the water column (Figs. A5 and A6). The zoeae of the rock crab are found much earlier in the year than those of the blue crab, peaking in late April. Peak concentrations ($\bar{x}$=120/m^3) were observed at Station 21, the most offshore collection site. The abundance of the megalopa stage of this crab peaked in late May in the same basic area (Stations 11, 21, 22, and 20). However, there were

Figure 2. Mean monthly abundances (#/m^3 $\log_{10}(x+1)$) (standard error) for blue crab zoea (Callinectes sapidus) from oblique (clear) and neuston (shaded) tows during 1984. (See Figure 1 for station numbers): a) June, b) July, c) August, and d) September.

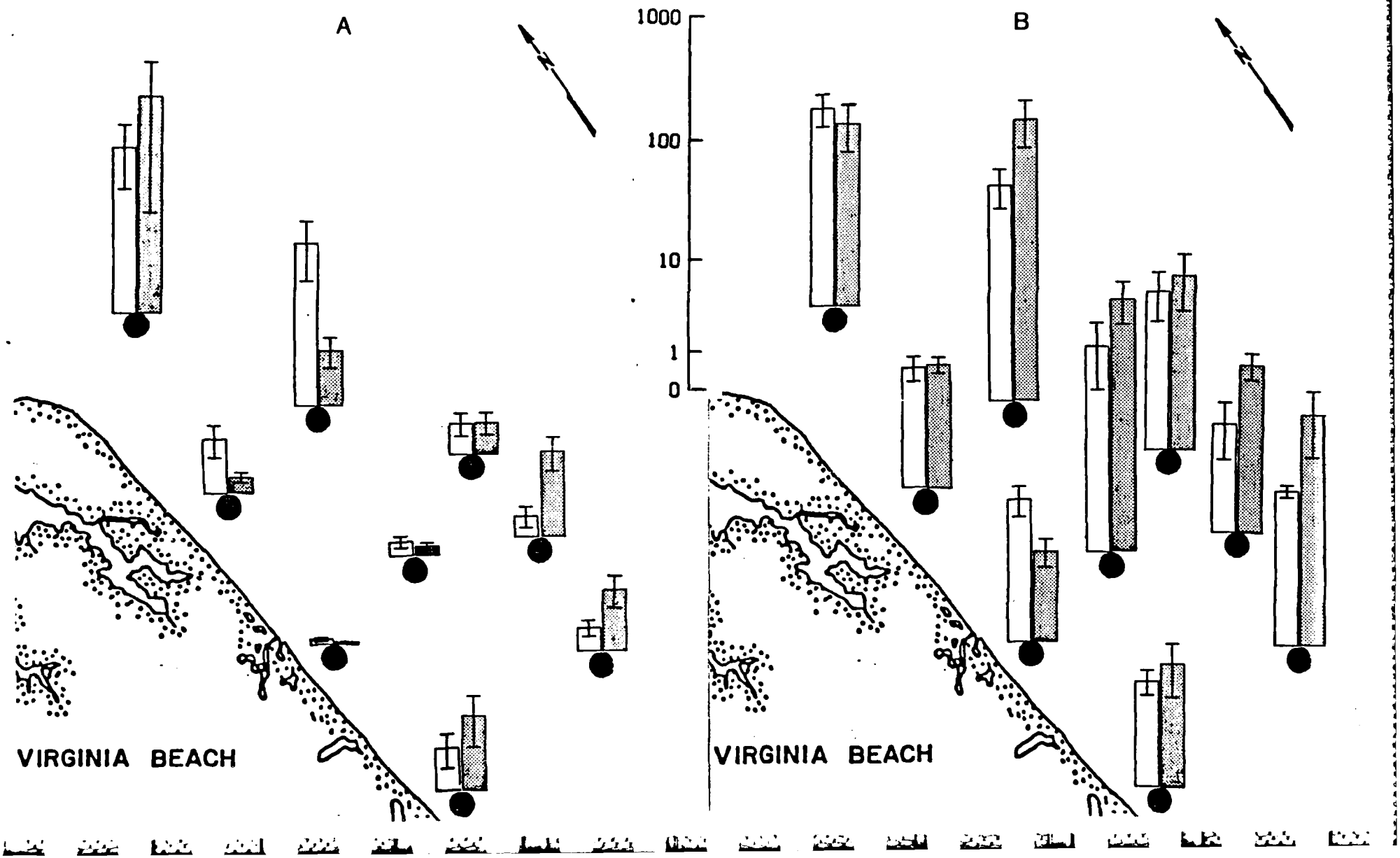


Figure 2. (Continued)

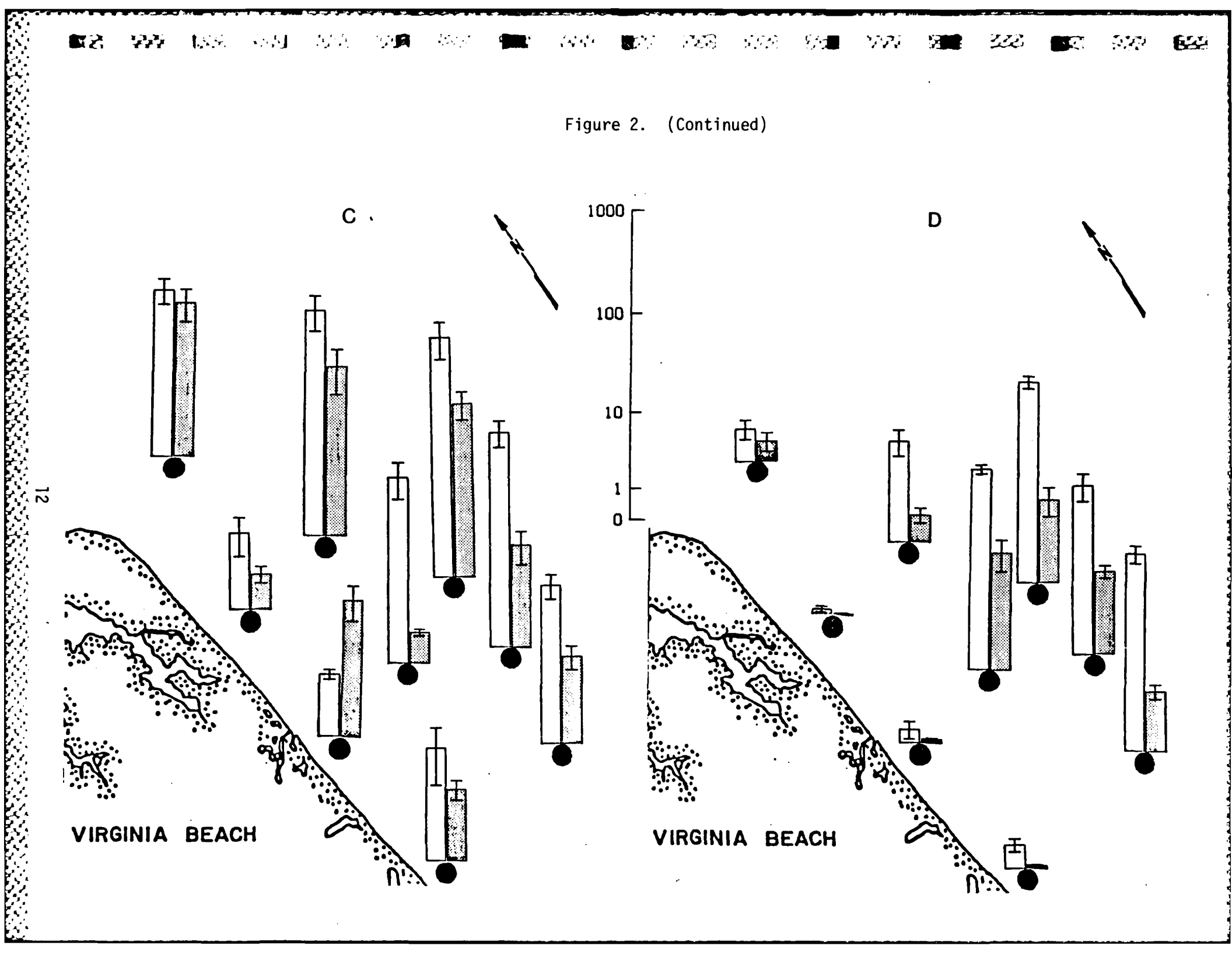
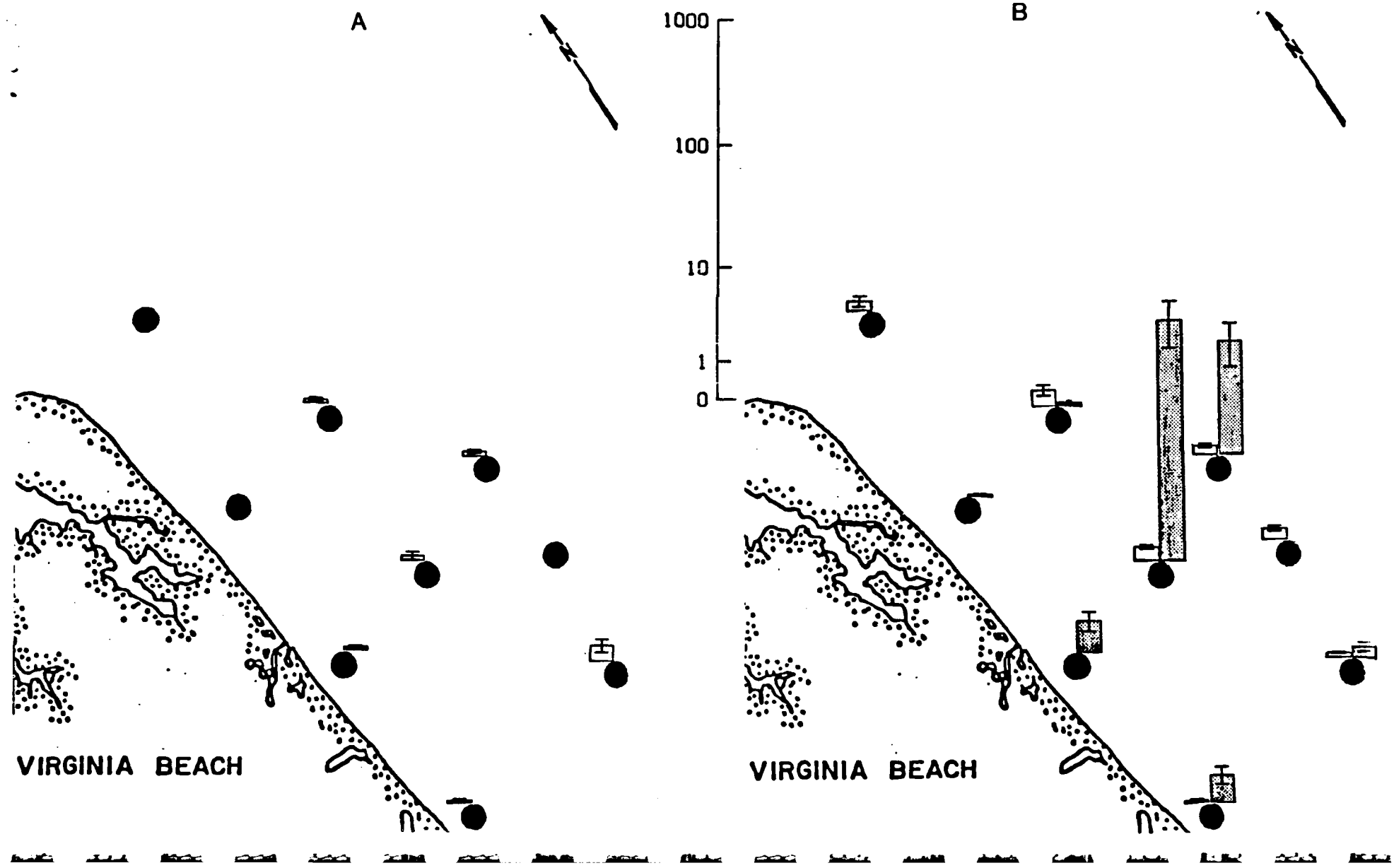


Figure 3. Mean monthly abundances (#/m^3 $\log_{10}(x+1)$) (standard error) for blue crab megalopae (Callinectes sapidus) from oblique (clear) and neuston (shaded) tows during 1984. (See Figure 1 for station numbers): a) August and b) September.



greater abundances of this stage in the neuston tows, indicating that the larvae may have tended to migrate to the surface during development (Figs. A7 and A8). Very few larvae of penaeid shrimp were found in the vicinity of DNDS. Of those which were observed, most were found in September at the offshore stations (Stations 21, 22, 11 and 1) (Figs. A9 and A10).

The noncommercial decapod crustaceans were placed into similar taxonomic groups for ease of presentation. Xanthid (mud) crab zoeae were observed in oblique tows from July to September at the northern and inshore stations (Stations 1, 10, 13, and 20) (Figs. A11 and A12). Since much fewer xanthid zoeae were found in the neuston tows, it is assumed that this group resides in the subsurface layers (Fig. A12). Pinnixid (or pea) crab zoeae were observed later in the year (Aug. through Nov.). They too were found in the subsurface waters of the more inshore stations (Stations 10, 12, 13, 23, and 1) (Figs. A13 and A14). **Pinnotheres spp.** crab zoeae exhibited a similar pattern to the pinnixid zoeae, except that peak abundances occurred early in August (Figs. A15 and A16). The zoeae were found in the subsurface layers of the inner stations (10, 13, 20 and 1). Zoeae of **Uca spp.** (fiddler crabs) pulsed in abundance from June to September (Figs. A17 and A18). This pulsing is not surprising since **Uca spp.** females spawn according to a lunar cycle. Peak abundances occurred in the subsurface waters of Stations 10, 11, 21, 20 and 13 (Fig. A18). Pagurid (hermit crab) zoeae were also found in subsurface waters, but their period of occurrence extended from June through October, with a peak in late July (Figs. A19 and A20). Unlike most of the

other noncommercial crabs, the station exhibiting the greatest abundance of pagurid zoeae is not Station 10, but rather Station 13, followed by 20, 12 and 1.

Among the shrimp-like groups, the sand shrimp **Crangon septemspinosa** is by far the dominant form. The grand mean for this group was nearly $8/m^3$, while those of the remainder of the groups in this category were less than $0.5/m^3$. The period of occurrence of **C. septemspinosa** larvae begins in early March and peaks in May. Stations 20, 1, 10, 21, 11 and 13 exhibited the greatest abundance of larvae, which were generally in the subsurface layers (Figs. A21 and A22). **Lucifer faxoni** larvae began to occur in the study area in August and peaked in late September. Maximum numbers of **L. faxoni** larvae occurred at the offshore stations (Stations 22, 20, 11 and 21) (Figs. A23 and A24). Larvae of the mysid shrimp **Mysidopsis bigelowi** were observed in the Fall. Since the cruises during the Fall of 1983 only involved 5 stations, it is difficult to detect strong geographic patterns, but the offshore stations (1 and 11) had fairly high numbers of these larvae, as compared to the few reported from inshore stations (12 and 13) (Figs. A25 and A26). Virtually none of the larvae of this species were found in the neuston. Larvae of **Neomysis americana**, another mysid shrimp, peaked in October, May and the end of July. Maximum abundances were observed for the more inshore stations (13, 10, 12) (Figs. A27 and A28).

The bivalve veligers of the study area peaked several times over the year: in March (Station 13), in May (Station 10), and July (Stations 23, 20) (Figs. A29 and A30). Gastropod veligers peaked at the end of July at Stations, 20, 11, 21 and 13 (Figs.

A31 and A32). The veligers of both groups were found in greatest abundance in the subsurface waters.

Among the fish eggs, the engraulid eggs clearly were dominant (see Fig. 4 for station and monthly trends). The grand mean for this group was $43/m^3$, while the means of the remaining groups were less than $3/m^2$. The engraulid eggs began to increase in abundance in May and June, and peaked in late July - early August (Figs. A33 and A34). There was no clear-cut distinction between oblique and neuston tows for this group. High concentrations ($\bar{x}>200/m^3$) of these eggs were found at Stations 22, 11, 10, 21, and 23. Bothid eggs exhibited a bimodal distribution: a small peak in April at Stations 11 and 1; and a larger peak in August at Stations 23, 11, 21, and 22 (Figs. A35 and A36). Bothid eggs tended to be found in greater abundance in the subsurface waters. Sciaenid eggs began to occur in late May and peaked by mid-August (Figs. A37 and A38). Maximum abundance values were observed at Stations 11, 22, 20, 23, 21, and 1. These eggs were also found in greater abundance in subsurface waters. The category "other fish eggs" contained all eggs which could not be identified as one of the three previous groups (Figs. A39 and A40). A large number of fish eggs were observed in Station 10 neuston tows at the end of July (Fig. A39). Station 13 neuston tows exhibited a moderately high abundance of fish eggs during the same period. The oblique tows taken at these stations at the same time contained only trace amounts of eggs, so it is apparent the high concentrations were floating at the surface. On the other hand, abundance peaks were noted in the oblique tows made at Stations 12, 11 and 20 during

Figure 4. Mean monthly abundances (#/m^3 $\log_{10}(x+1)$) (standard error) for engraulid fish eggs (Anchoa mitchilli) from oblique (clear) and neuston (shaded) tows during 1984. (See Figure 1 for station numbers): a) May, b) June, c) July, d) August, and e) September.

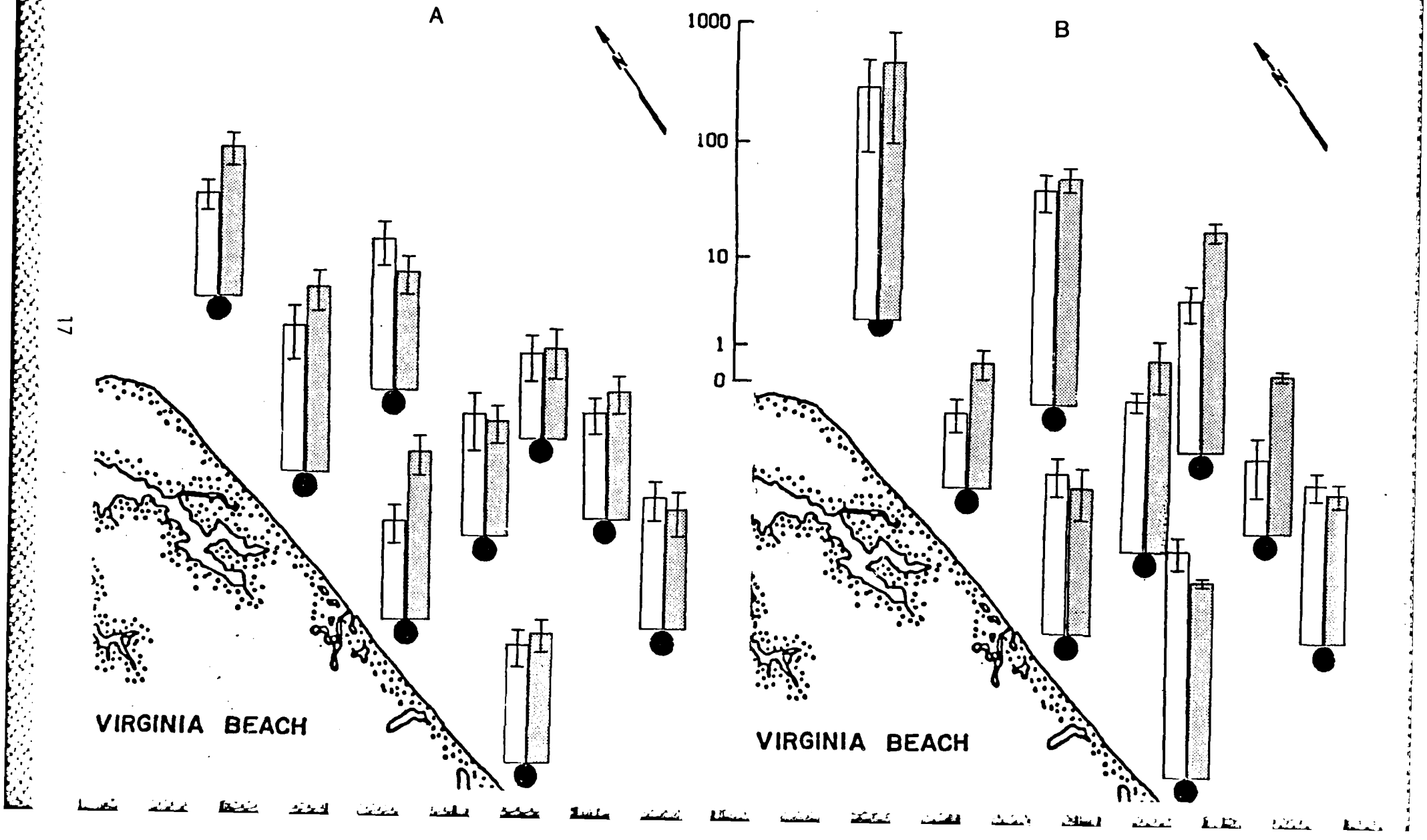


Figure 4. (Continued)

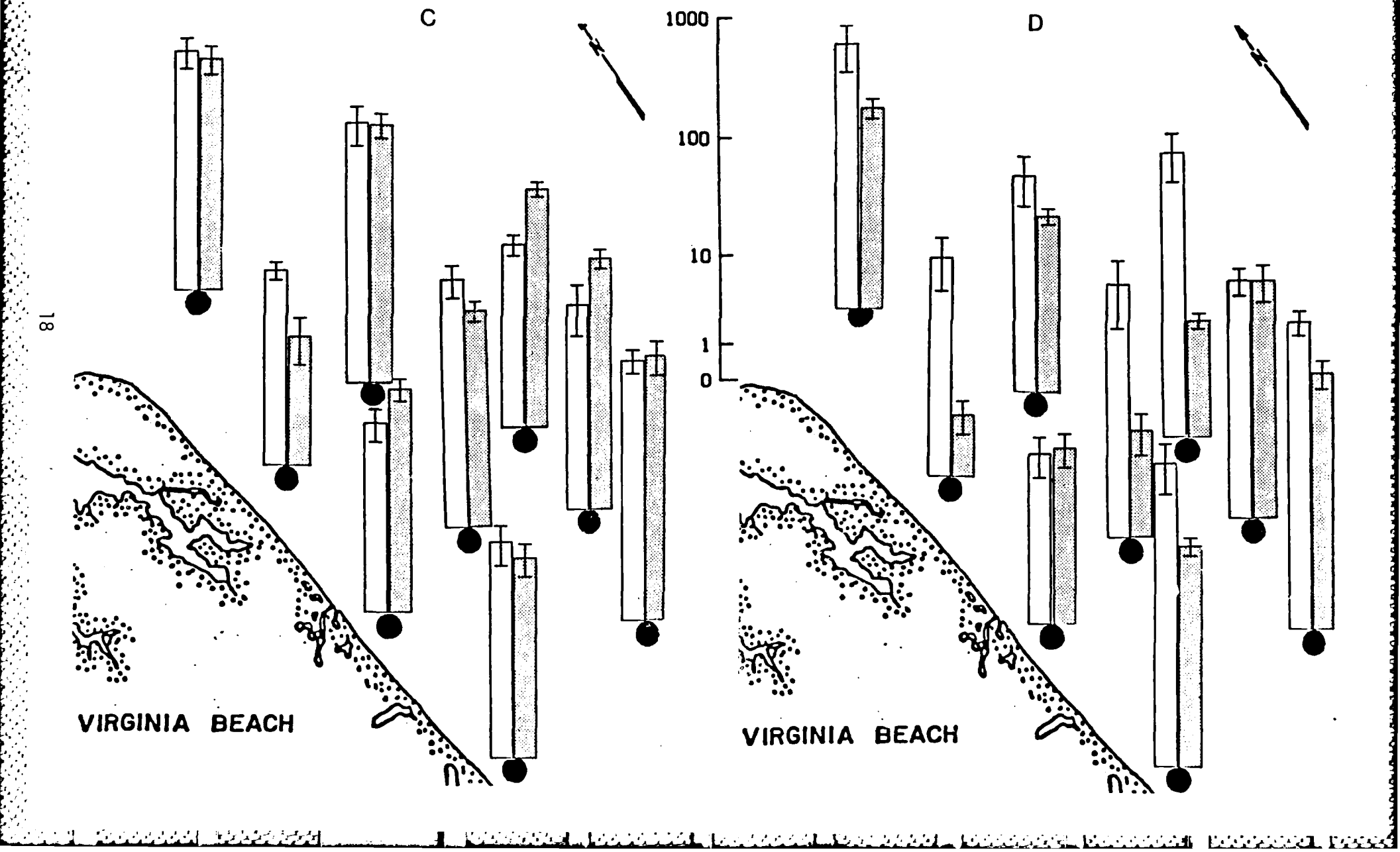
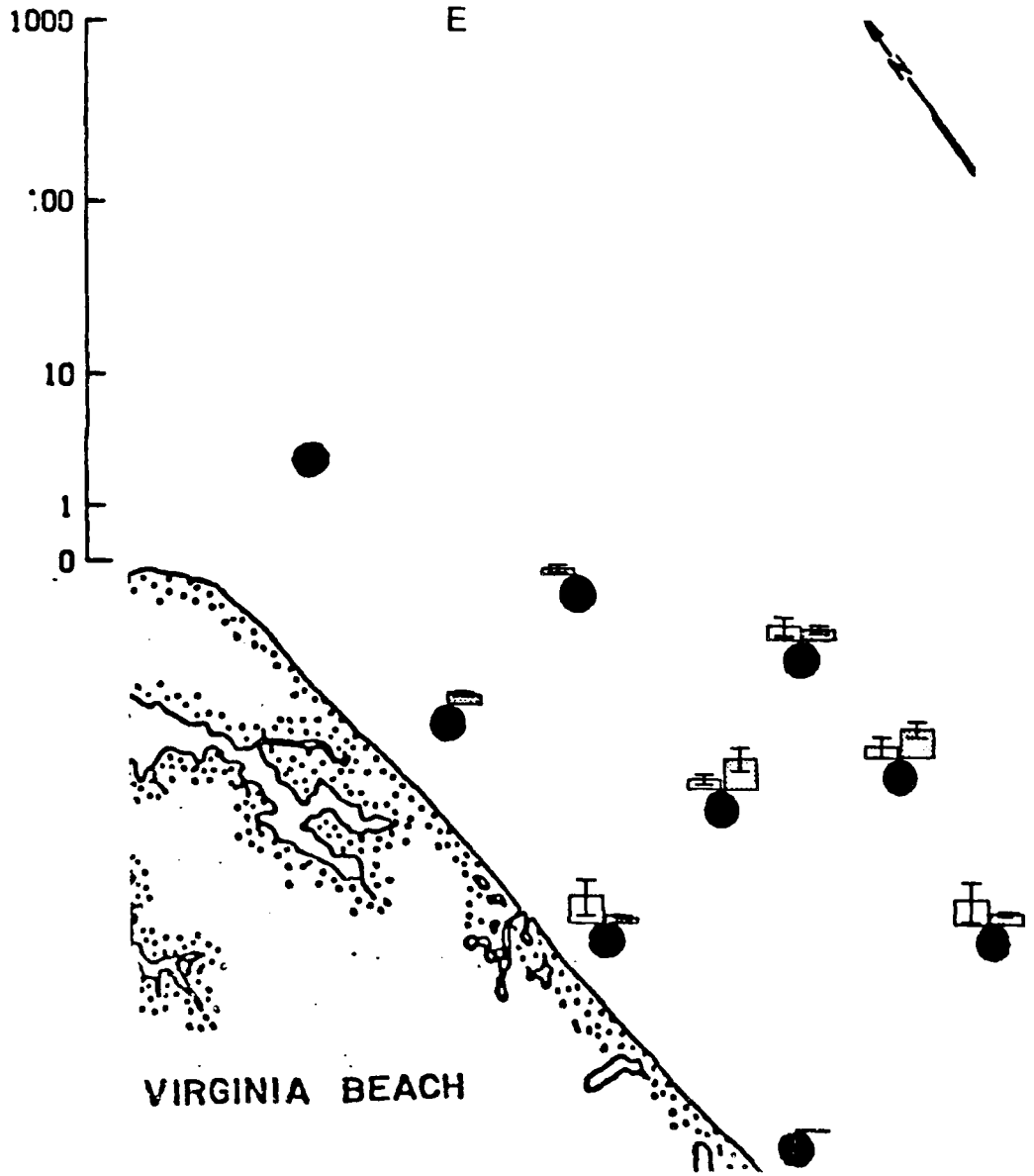


Figure 4. (Continued)



August.

Fish larvae were only collected in fairly low numbers during the present study. Among the flatfishes, larvae of **Bothus ocellatus** and **Trinectes maculatus** were not observed in the study area. **Etropus microstomus** larvae were found in the subsurface waters of the offshore stations (11, 21, 1, 22) in late August (Figs. A41 and A42). Likewise, **Paralichthys dentatus** larvae also peaked in August in the subsurface layers of the offshore stations (22, 21, 11) (Figs. A43 and A44). **Scophthalmus aquosus** larvae exhibited a similar pattern except that maximum abundances were found at Station 23, followed by Stations 21 and 11 (Figs. A45 and A46). Of course, all of the flatfish larvae were found in trace amounts and with a great deal of variability. As a result, these "patterns" should not be regarded as being extremely significant.

Among the sciaenids, no larvae of the croaker **Micropogonias undulatus** were observed in the study area. Larvae of the spot **Leiostomus xanthurus** were observed in trace amounts at Station 11 in August. Larvae of the weakfish **Cynoscion regalis** occurred in August and September in the subsurface waters of various stations throughout the study area (Figs. A47 and A48).

In the category of "other fish", larvae of mullet (**Mugil spp.**) were seen only in trace levels ($<0.05/m^3$). Trace levels of blue fish (**Pomatomus saltatrix**) larvae were observed in the neuston tows from Stations 20, 23, 21, 11, and 1 in May (Figs. A49 and A50). Larvae of the sand lance (**Ammodytes hexapterus**) were observed in the surface waters of Stations 1 and 10 in December and February (Figs. A51 and A52), although there was some variability in the data. The larvae of the menhaden **Brevoortia**

tyrannus reached maximum abundance in the neuston layer of the offshore stations at the end of May (Figs. A53 and A54). The fish larvae exhibiting the greatest abundance during the present study were those of the Bay anchovy **Anchoa mitchilli**. This species probably is responsible for the vast majority of the numerous engraulid eggs and newly hatched engraulid fry observed in the region. The **A. mitchilli** larvae peaked in the subsurface waters of inshore stations (13, 10, 12, and 1) in August (Figs. A55 and A56). Engraulid fry, which were most likely **A. mitchilli**, were observed to reach maximum abundance in July at the more southern, offshore stations (21, 22, 20, 3) (Figs. A57 and A58).

Two additional plankton groups were included with the "important" forms of the region: the larvaceans and the phoronid larvae. The larvaceans are a holoplankton group which retains larval-like characteristics and lifestyle throughout its life cycle in the plankton. This group peaked in abundance in August and September at the subsurface waters of southern, offshore stations (21, 22, 11) (Figs. A59 and A60). In September, maximum values were observed at Station 23. The phoronid larvae were found in greatest numbers during the end of August in the subsurface waters of Stations 23, 10, 1, 11 and 20 (Figs. A61 and A62).

The data set was further reduced for statistical analysis by running a PCA on the covariance matrix of the data from the groups of numerical and/or commercial importance. It was found that the first three PCA factors explained 93% of the total variance and that the first six accounted for 99% (68%, 15%, 10%, 3%, 1%, 1%)

of the variance in the data set. In examining the factor loadings of the eigenvectors, it was discovered that each of the factors was highly loaded upon by a single taxon: 0.94 correlation between PCA1 and engraulid eggs; 0.89 between PCA2 and larvaceans; 0.91 between PCA3 and blue crab zoeae; 0.98 between PCA4 and sand shrimp larvae; 0.99 between PCA5 and "other" fish eggs; and 0.99 between PCA6 and blue crab megalopae. Thus, the variance of the meroplankton communities of the study area can be described by a few PCA factors. In turn, these factors are based upon only a few of the most dominant taxonomic groups.

In order to statistically evaluate the patterns, the PCA factors were subjected to a series of stepwise multiple regression analyses designed to account for the effects of month to month changes (linear and non-linear), tow type (neuston or oblique), station location (west to east; north to south), as well as all appropriate interactions. Although models were run for each season, the summer models were the ones of greatest interest. Table A5 presents the results of these regression analyses.

The models for PCA1 (the engraulid egg factor) confirm the significance of the patterns previously described qualitatively. In spring, the north-south variable has a negative coefficient, indicating that the eggs are found in significantly higher numbers at the northern end of the sampling pattern (e.g. Stations 10, 1, 11). However, the eggs are found in greatest abundance (i.e. NSWE has a positive coefficient) at the southern, offshore stations (Stations 21, 22, 11) during the summer months. The eggs tended to be found more in the subsurface levels than in the neuston during this period.

The PCA2 (larvacean factor) regression model for the summer season confirmed that abundances of the larvaceans were significantly higher at the more southern, offshore stations (21, 11, 22), particularly in the oblique tows. The PCA3 (blue crab zoeae) model indicated that the zoeae were in significantly higher concentrations (i.e. positive west to east coefficient) in the more offshore stations (e.g. Stations 1, 11, 20, 21, 10) than at the inshore stations. The spring PCA4 (**Crangon septemspinosa** factor) regression model indicated the larvae of this shrimp were found to be significantly higher in the subsurface layers (i.e. a negative "neuston" coefficient) and to be at higher concentrations in the northern stations (1, 10, 20, 11). The PCA5 (unidentified fish eggs) regression model for the summer season confirmed that these eggs were found in significantly higher numbers (i.e. a negative north-south by west-east coefficient) at the more northern, inshore stations (10, 12, 13). The PCA6 (blue crab megalopae) regression model for summer indicated that the megalopae are mainly in the neuston layer (positive neuston coefficient).

Although it would be possible to explore patterns in the data with other multivariate data reduction techniques (e.g. various types of classification or cluster analysis; PCA of the correlation matrix; discriminant analysis; MANOVA), they were not deemed necessary for the present descriptive report. Such techniques will be utilized to explore subtle patterns in the data set as a whole and for individual species, as time permits in the future.

DISCUSSION

It is important to understand the theory associated with abundance estimates reported for plankton collected during this study. Collections were made with nets designed to sample identical cross-sectional areas. The fundamental difference between the tow types was that the oblique tows sampled portions of the entire water column while the neuston nets fished the surface layer (top 10 cm) of the water mass(es). As a result, fishing success may vary between the two tow types for any particular species. The selectivity of the sampling method depends on the organism(s) sampled and their relative position in the water column. For example, some species (or life stages) may be found in a specific zone above or below the pycnocline or at the air-sea interface (neuston, pleuston, etc.). The neuston represented the zone of interest in this particular study.

If any species primary inhabits the surface layer, then one would expect greater fishing success associated with the neuston tows versus the comparable oblique tows. Additional information can be inferred from tow differences for species that may reside above the pycnocline but is not limited to the surface water mass. The species abundances from both neuston and oblique tows should be comparable when averaged over the entire study area. Of course, several assumptions should be made: the upper layer is well mixed allowing for a homogeneous population of plankters and the oblique tows sample equally above and below the pycnocline. If a species inhabits the water mass below the pycnocline, then that species should be reported in the oblique tows but should

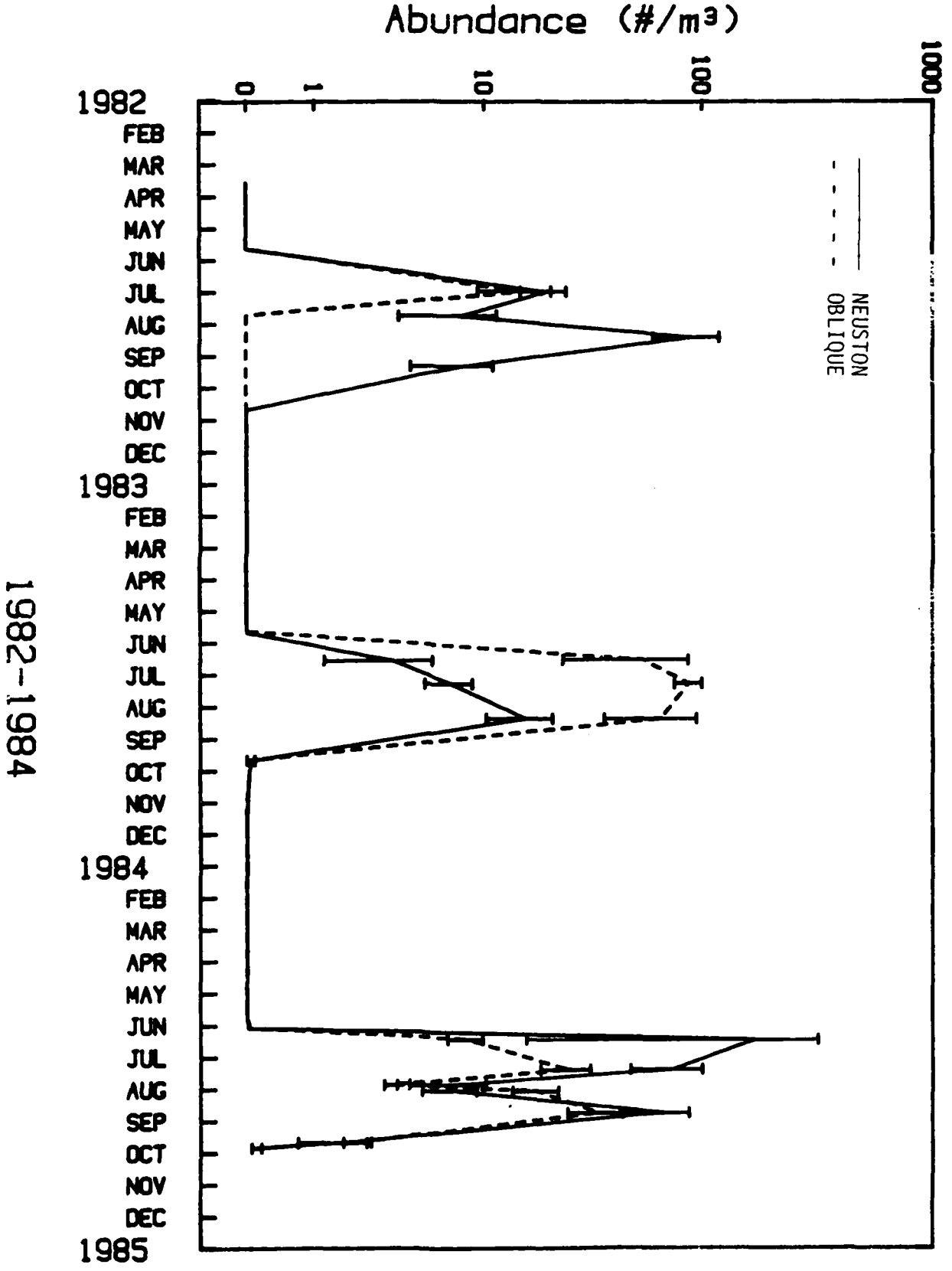
have little or no occurrences in the neuston tows.

Distributional Patterns

The meroplankton of the DNDS study area tends to be dominated by seasonal pulses of a relatively few dominant taxa. Nonetheless, it is useful to look at the distributional patterns of all of the major groups in order to attempt to understand the dynamic trends in the region.

The distribution of blue crab larvae in the Chesapeake Bay and adjacent coastal waters has been the focus of investigations in recent years (see review by Butt et al., 1984). In general, these zoeae appear to move out of the Bay mouth in the surface plume waters and then move offshore. This pattern parallel that described by McConaugha et al. (1983) for zoeae collected at more northern, offshore stations. Provenzano et al. (1982) further contend that first stage larvae are transported offshore in the neuston layer, with peak concentrations occurring at night. However, their sampling methods and selective gear types tended to skew fishing success to the neuston collections (see Aron and Collard, 1969 for a discussion of the effects of different gear types/towing speeds on selectivity). Results from the present study support their general theory; however, the findings indicate that major concentrations of early stage zoeae may be found throughout the waters of the plume (above the pycnocline), rather than in just a narrow neuston layer (see Fig. 5 for three year comparison study at Station 10, 1982 - 1984). Once of the zoeae leave the Bay most were found offshore from the DNDS area.

Figure 5. Mean abundances (standard error) for blue crab zoea (Callinectes sapidus) collected from oblique and neuston tows at Station 10 from 1982 - 1984.



The blue crab megalopae were found in moderate numbers in the neuston of the southern stations of the study area in the late summer. Whether these megalopae are a successful component of the recruitment into the Bay is unknown. Their numbers are comparable with those observed in the offshore waters in the vicinity of the Norfolk Disposal Site (Butt et al., 1984; Johnson, 1982). These megalopae may represent a portion of the entire population which is being carried throughout the region on wind-driven currents of the surface layer until the time is right to drop into the deeper waters and re-enter the Bay (Johnson et al., 1983).

The larvae of the other major groups of decapod crabs exhibit distributional patterns very different from that of the blue crabs larvae. The rock crab **Cancer irroratus** is a coastal species which is of potential economic importance to the region. These crabs are caught by commercial fishermen trawling in coastal Virginian waters and are sold in seafood markets of the area. The zoeae of this species are, not too surprisingly, found at the most offshore stations of the study area, and the populations observed even at these stations probably represent only the inner fringe of the total larval stock of the species. Johnson (1982) classifies the larvae of **C. irroratus** as "retained shelf" forms because they seldom enter the Bay. Sandifer (1972) seldom found zoeae of this species in the lower Bay. The data from the present study tend to confirm the speculations by Johnson (1982) that the megalopae come to the surface to avoid entrainment into the Bay via bottom waters. These observations also tend to disprove the contention of Bigford (1979) that the megalopae are epibenthic. The maximum abundance of the megalopae were in the neuston tows at the most

offshore stations.

Most of the remaining decapod crab species observed during the present study can be considered to be "estuarine". The larvae of xanthid (mud) crabs have been previously reported to be found at the more inshore stations of most studies (Pinschmidt, 1963; Dudley and Judy, 1979; Sandifer, 1972; and Johnson, 1982). Likewise, **Pinnotheres spp**. crab larvae are retained, for the most part, in the middle to lower regions of estuaries (Pinschmidt, 1963; Tagatz, 1968; and Sandifer, 1972) or are associated with the mouth of the estuary (Dudley and Judy, 1971). The pinnixid crab larvae have also been reported to reach maximum abundance in the vicinity of the Bay mouth, but to decrease "precipitously" seaward (Sandifer, 1972; and Johnson, 1982).

All three groups of decapod crabs displayed similar larval distribution patterns in the study area. Fairly low concentrations of larvae were seen in the study area, but the highest levels tended to be observed in the subsurface waters of the northern stations near the Bay mouth. The larvae of these crabs apparently are among the few that end up in the inshore waters of the study area (e.g. Station 13). The larvae of these "estuarine" crabs transported beyond the Bay mouth descend to the deep waters and are carried back along the inshore northward gyre. A similar transport mechanism has been suggested for the suspended solid load of the plume (see Alden and Butt, 1985a,b). At this point, the crab larvae are in a position to reinvade the Bay's bottom waters, either as zoeae or following metamorphosis to megalopae. The larval stocks of these crabs moving through DNDS to the south

would be expected to be minimal.

The **Uca spp.** (fiddler) crab larvae have a slightly different distributional pattern reported in the literature. The female fiddler crabs spawn on the spring night-time high tide of summer months, so that larvae are carried seaward, out of the following spring ebb tide (Johnson, 1982; Christy and Stancyk, 1982). Thus, the **Uca spp.** are estuarine crabs that tend to be expelled rather than retained. Therefore, it not too surprising that relatively higher abundances of the larvae of this group of crabs were observed in the study area in comparison to those of the previous three groups. Nonetheless, the larvae were found concentrated in the subsurface waters of the more northern stations. Perhaps, this trend indicates an expullsion/reinvasion pattern of the zoeae moving farther offshore prior to reinvasion into the nearshore waters south of the Bay mouth. Thus, the **Uca spp.** zoea are somewhat more widespread in abundance throughout the study area, but the majority of the transport activity appears to be in the northern end.

The pagurid (hermit) crab larvae appear to have a slightly different larval distributional pattern. The larvae concentrated in the subsurface layers of the water column, with maximum abundances found around Rudee Inlet rather than the Bay mouth. Thus, the source of the larvae may have been populations of hermit crabs from Rudee Inlet and/or the inshore waters off Virginia Beach.

The few peneaid shrimp larvae that were observed were found at the offshore stations. Sick (1970) studied the distribution of peneaid shrimp larvae and concluded that development takes place

offshore and that larval stocks may be found 50 - 100 nautical miles from shore without being considered lost to the breeding populations. The larvae observed during the present study are probably either a very small subpopulation which come from North Carolina waters to the south or were produced by the very small adult populations of penaeids observed in Virginian waters. Either way, the numbers observed probably do not represent a significant larval stock for the region.

The larvae of the sand shrimp **Crangon septemspinosa** has been reported as the dominant decapod larval form in previous studies of the Chesapeake Bay (Sandifer, 1972; Goy, 1976). In fact, Sandifer (1972) reported that the peak numbers of this species were generally of the same order of magnitude as the total concentrations of all other larval species combined. A similar trend was observed in the present study, where larval numbers for this species were only exceeded by those of **Callinectes sapidus** zoeae during peak conditions. It is believed that the **C. septemspinosa** larvae observed in the study area are probably from an indigenous population, rather than the Bay, since the sand shrimp is one of the dominant epibenthic forms of the region (Dr. Dauer, personal communication). Also, the maximum concentrations were observed in the middle of the study area, rather than at the Bay mouth station. Moreover, **C. septemspinosa** larvae represents one of the only meroplankton groups which has a distributional pattern concentrated at DNDS. The larvae were clearly in the subsurface layers and also appeared in the waters of the inshore region.

The larvae of the holoplanktonic decapod shrimp **Lucifer**

faxoni clearly displayed a distribution indicative of a more oceanic form. Maximum abundances were only observed at the offshore stations of the study area. Likewise, the larvae and adults of the coastal water mysid **Mysidopsis bigelowi** tended to only be found at the outer stations of the study area, probably as a fringe subpopulation of the populations known to occur farther offshore at the Norfolk Disposal Site (Dr. Dauer, personal communication). On the other hand, the estuarine mysid **Neomysis americana** had a distribution pattern that was more clearly indicative of a nearshore source: only the subsurface waters of nearshore stations exhibited high concentrations. Thus, none of these remaining crustacean groups had larval abundance patterns which concentrated significantly over DNDS.

The bivalve veligers displayed several peaks of abundance during the study. This is not too surprising because a number of different bivalves known to live in the area have different spawning times (Butt et al., 1985). However, the levels of abundance of the veligers were orders of magnitude lower than those observed for tows made in the Bay with a smaller mesh net (Butt et al., 1985). Even though the larger mesh (353 micron) net employed during the present study was not as efficient at collecting the veligers, it is felt that the low numbers observed are indicative of a low degree of activity in the region. As might be expected, no oyster larvae were observed during the present study. The gastropod veligers were found to peak at stations through the middle of the study area, possibly as a result of spawning by populations of gastropods endemic to region of the DNDS.

Among the fishes, **Anchoa mitchilli** appears to be the domi-

nant species in the study area. The engraulid eggs that dominate the plankton counts in the summer are believed to be **A. mitchilli** eggs. The larvae of this species has been shown to be an inshore form in previous studies (Fahay, 1975). The eggs appear to originate in the neuston of the northern stations, but are found throughout the water column of most of the outer stations of the study area. The engraulid fry first appeared at the southern, offshore stations, but by the time the larvae are clearly identifiable as **A. mitchilli**, they have made their way into the subsurface waters of the northern, inshore stations. At this point, the larvae are probably in the process of reinvading the Bay.

The remainder of the fish examined appear to spawn offshore of the study area. Only a few bothid and sciaenid eggs were collected, and they were collected at the more offshore stations. Fahay (1975) noted that many species of bothids and sciaenids spawn offshore and the larvae migrate inshore during development. The larvae of these groups were only found in trace amounts in the study area, so this region does not appear to be a major part of the reinvasion route into the Bay.

Nelson et al. (1977) have suggested that **Brevoortia tyrannus** populations from the Southeastern Bight spawn offshore and the larvae are carried back inshore by Ekman (wind-driven) transport of surface waters. The maximum numbers of larvae of this species were observed in the neuston of the most offshore station of the study area. A similar process may be occurring in the Bay region. However, the number of larvae were so low that it is doubtful whether the study area is a major part of the larval

transport route for this major fisheries species of the Bay. Larvae of the blue fish **Pomatomus saltatrix** exhibited a similar pattern. Larvae were found in the neuston tows of the offshore stations of the study area. However, like the menhaden larvae, the numbers of larvae of blue fish were far too low to indicate any definite pattern.

The only other major planktonic group observed in the study area were the larvaceans. Like the **Lucifer faxoni** populations, these forms clearly come from offshore, possibly from the Gulf Stream to the south where they are believed to play a major trophic role as a food source for planktonic food webs (Alldredge, 1972, 1976). They were observed primarily at the southern, more offshore stations of the study area, probably as a subpopulation of a larger offshore stock.

SUMMARY AND CONCLUSION

To summarize the significant patterns of meroplankton in the vicinity of the DNDS, many of the estuarine species stay to the north and inshore of the site (e.g. **Xanthid**, **Pinnothesis**, **Pinnixid**, and **Uca** crab larave). A number of offshore spawners are found primarily seaward of DNDS (e.g. the Bothids, Sciaenids and most of the other fishes; the **Cancer irroratus** larvae, the penaeid shrimp larvae). The only species which apparently move through the study area in ecologically significant numbers are the blue crab (**Callinectes sapidus**) larvae, the Bay anchovy (**Anchoa mitchilli**) larvae, the larvaceans, and the sand shrimp (**Crangon septemspinosa**) larvae. This fact was made evident by the PCA analysis of the data which showed that over 97% of the variance in the data could be described by factors describing the abundance patterns of these few species. Even the blue crab zoeae tend to be found in greatest numbers along the Atlantic Channel stations, offshore of DNDS. So this particular area does not appear to represent a major larval transport route for any but the most common and commercially insignificant species (e.g. sand shrimp, Bay anchovies, and possibly gastropods and hermit crabs). The only possible exception would be the blue crab megalopae found in the neuston in the center of the study area. However, this population may represent only a small portion of the recruitment stock to the Bay. Previous studies have documented equal or greater concentrations of megalopae farther offshore.

ACKNOWLEDGEMENTS

The authors express their appreciation to the taxonomists who spent long hours with the microscopes. Particular thanks are extended to Donna VanKeuren, Jean Stankovich, Jacqueline Annis, and Anthony Rodi. Additional thanks are given to the field crews of the R/V Zoea, NOAA vessel R/V Laidly, and COE vessel R/V Mobjack. Final results were made posible due to the dedicated data processors who managed the massive data sets and never dying mainframe. They are John Seibel, David Wade and Martha Norris. Additional thanks are given to David Wade for the graphs.

This research was funded by the U.S. Army Corps of Engineers, Norfolk District under Contract DACW65-81-C-0051.

REFERENCES

Alden, R.W. 1977. Zooplankton. Chapt. V, In: A Summary and Analysis of Environmental Information on the Continental Shelf and Blake Mateau from Cape Hatteras to Cape Canaveral, prepared for the Bureau of Land Management, Contrct AA550-CT7-39.

Alden, R.W., R. Dehiya and R.J. Young. 1982. A Method for the Enumeration of Zooplankton Subsamples. J. Exp. Mar. Biol. Ecol. 59:185-106.

Alden, R.W., and A.J. Butt. 1985a. A Study of Physical Parameters at the Dam Neck Disposal Site During the Summer of 1984. Final Report to U.S. Army Corps of Engineers, Norfolk District, VA. 21 pp.

Alden, R.W., and A.J. Butt. 1985b. Water Quality Monitoring at Dam Neck and Norfolk Disposal Sites. Final Report to the U.S. Army Corps of Engineers, Norfolk District, VA. 46 pp.

Alden, R.W. and A.J. Butt. 1985c. Meroplankton of Lower Chesapeake Bay and Proposed Norfolk Disposal Site. Final Report to U.S. Army Corps of Engineers, Norfolk District, in preparation.

Alldredge, A.L. 1972. Abandoned Larvacean Houses: A Unique Food Source in the Pelagic Environment. Science 177:885-887.

Alldredge, A.L. 1976. Discarded Appendicularian Houses as Source of Food, Surface Habitats, and Particulate Organic Matter in Planktonic Environments. Limnol. and Oceanogr. 21(1):14-23.

Aron, W., and S.B. Collard. 1969. A Study of the Influence of Net Speed on Catch. Limnol. and Oceanogr. 14(2):242-249.

Bell, M.D. 1973. Fisheries Handbook of Engineering Requirements and Biological Criteria. U.S. Army Corps of Engineers, Fish. Eng. Res. Prog., Portlant, OR, pp. 497.

Brehmer, M.L. 1971. "Contract Report on Nearshore Bottom Currents Off Virginia Beach, Virginia," Virginia Institute of Marine Science, Gloucester Point, VA, September.

Butt, A.J., R.W Alden and R.J. Young. 1985. Meroplankton of Lower Chesapeake Bay and Proposed Norfolk Disposal Site. Supplemental Contract Report to U.S. Army Corps of Engineers, Norfolk, VA, in manuscript.

Christy, J.H. and S.E. Stancyk. 1982. Timing of Larval Production and Flux of Invertebrate Larvae in a Well-Mixed Estuary. Estuarine Comparisons (V. Kennedy, ed.). Academic Press, 489-504 pp.

DeCoursey, P.T. and W.B. Vernberg. 1975. The Effect of Dredging in a Polluted Estuary on the Physiology of Larval Zooplankton. Water Research 9:149.

Dudley, D.L. and M.H. Judy. 1971. Occurrence of Larval, Juvenile, and Mature Crabs in the Vicinity of Beaufort Inlet, North Carolina. NOAA Tech. Rept. NMFS SSRF-637. 10 pp.

Fahay, M.P. 1975. An Annotated List of Larval and Juvenile Fishes Captured with Surface-Towed Meter Net in the South Atlantic Bight during Four R/V Dolphin Cruises Between May 1967 and February 1968. NOAA Tech. Rept. NMFS SSRF-685. 39 pp.

Goy, J.W. 1976. Seasonal Distribution and the Retention of Some Decapod Crustacean Larvae Within the Chesapeake Bay, Virginia. M.S. Thesis, Old Dominion Univ., Norfolk, VA. 334 pp.

Hester, B.S. 1983. A Model of the Population Dynamics of the Blue Crab in Chesapeake Bay. Technical Report No. 83-6, Old Dominion University Research Foundation, Norfolk, VA. 116 pp.

Hoss, D.E., L.C. Coston and W.E. Schaaf. 1974. Effects of Seawater Extracts of Sediments from Charleston Harbor, SC, on Larval Estuarine Fishes. Estuarine and Coastal Marine Sci. 2:323.

Jeffries, H.P. and W.C. Johnson. 1973. Distribution and Abundance of Zooplankton. Pages 4-1 through 4-93 in: Coastal and Offshore Environmental Inventory, Cape Hatteras to Nantucket Shoals, Univ. of Rhode Island, Marine Publ. Series No. 2.

Johnson, D.R. 1982. A Comparison of Recruitment Strategies Among Brachyuran Crustacean Megalopae of the York River, Lower Chesapeake Bay and Adjacent Shelf Waters. Ph.D. Dissertation, Old Dominion University, Norfolk, VA. 97 pp.

Johnson, D.R., B.S. Hester, and J.R. McConaugha. 1983. Studies of a Wind Mechanism Influencing the Recruitment of Blue Crabs in the Middle Atlantic Bight. Technical Report No. 83-5, Old Dominion University Research Foundation, Norfolk, VA. 52 pp.

Ketchem, B.H. 1954. Relation Between Circulation and Planktonic Populations in Estuaries. Ecology 35(2):191-200.

McConaugha, J.R., A.J. Provenzano. 1980. Distribution and Migration of Blue Crab Larvae in the Lower Chesapeake Bay USA and Adjacent Coastal Waters. Am. Zool. 20(40):888.

Nelson, W.R., M.C. Ingham, and W.E. Schaaf. 1977. Larval Transport and Year-Class Strength of Atlantic Menhaden, **Brevoortia tyrannus**. Fish. Bull. 75(1):23-41.

Pinschmidt, W.C., Jr. 1963. Distribution of Crab Larvae in Relation to Some Environmental Conditions in the Newport River Estuary, North Carolina. Ph.D. Dissertation, Duke Univ. 112 pp.

Provenzano, A.J., J.R. McConaugha, K.B. Phillips, D.R. Johnson, and J. Clark. 1983. Vertical Distribution of First Stage Larvae of the Blue Crab, **Callinectes sapidus**, at the Mouth of Chesapeake Bay. Estuarine Coastal and Shelf Science, 16:489-499.

Roberts, M.H., Jr. 1974. Zooplankton Communities. Chapt. 3, In: A Socio-Economic Environmental Baseline Summary for the South Atlanticc Region between Cape Hatteras, NC and Cape Canaveral, FL. Virginia Institute of Marine Science, Gloucester Point, Final report to Bureau of Land Management, Contract EQ4AC007, New Orleans, LA. 5 Vols.

Sandifer, P.A. 1972. Morphology and Ecology of Chesapeake Bay Decapod Crustacean Larvae. Ph.D. Dissertation, University of Virginia. 532 pp.

Sandifer, P.A. 1973. Distribution and Abundance of Decapod Crustacean Larvae in the York River Estuary and Adjacent Lower Chesapeake Bay, Virginia, 1968-1969. Chesapeake Sci. 14:235-257.

Sandifer, P.A. 1975. The Role of Pelagic Larvae in Recruitment to Populations of Adult Decapod Crustaceans in the York River Estuary and Adjacent Lower Chesapeake Bay, Virginia. Estu. Coast. Mar. Sci. 3:269-279.

Sick, L.V. 1970. Larval Distribution of Commercially Important Penaeidae in North Carolina. J. of the Elisha Mitchell Scientific Soc. Vol. 86(3):118-127.

Tagatz, M.E. 1968. Biology of the Blue Crab, **Callinectes sapidus** Rathbun, in the St. Johns River, Florida. Fish. Bull. 67:17-33.

Thompson, J.R. 1973. Ecological Effects of Offshore Dredging and Beach Nourishment. U.S. Army Corps of Engineers, Coastal Eng. Res. Center, Washington, DC, Misc. Report. pp 73.

APPENDICES

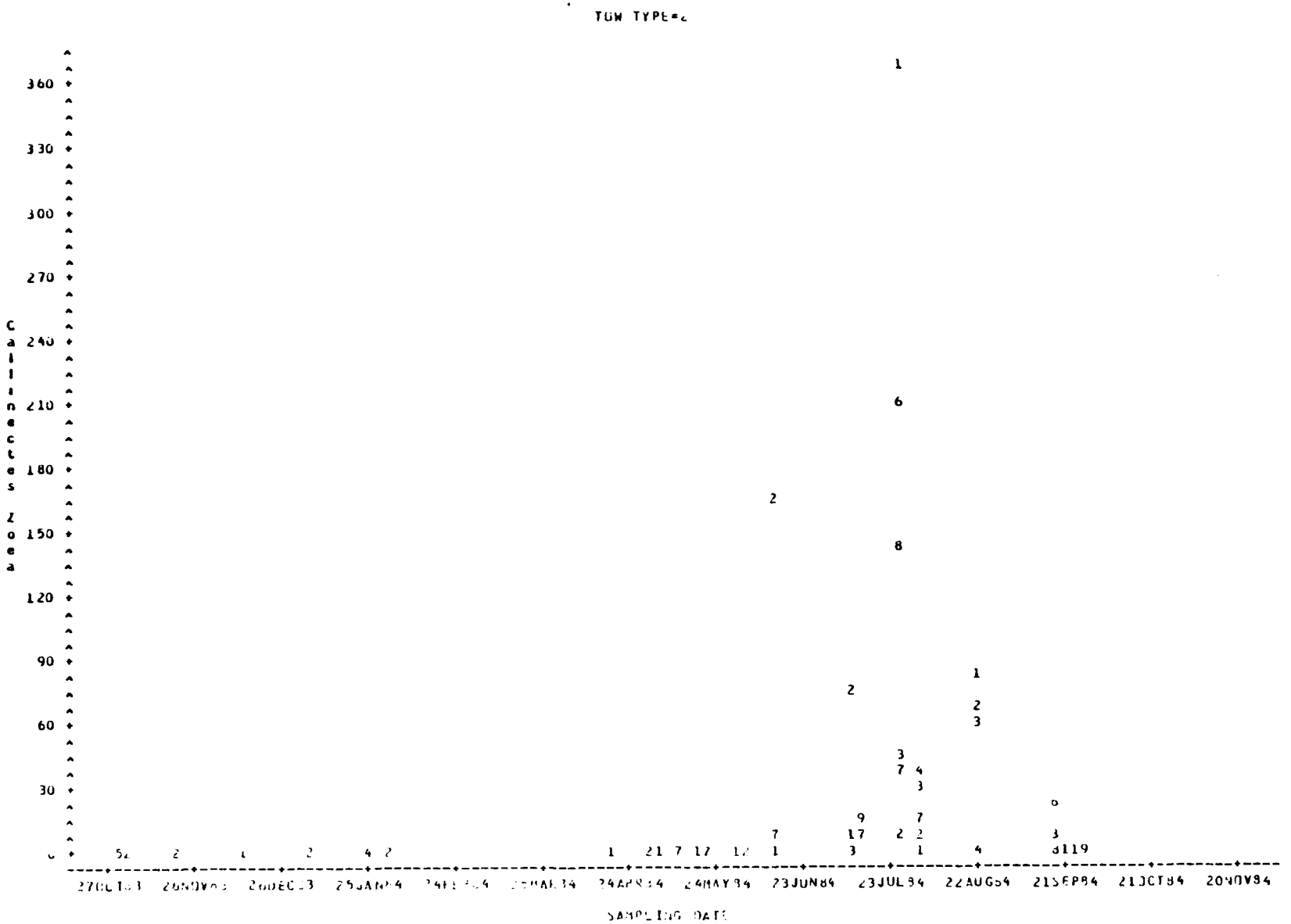
LIST OF FIGURES

LIST OF TABLES

LIST OF TABLES
(Continued)

Figure A. Abundance (#/m^3) of important meroplankton groups by date. The numbers indicate the mean values of four replicates for the tow type (tow type 2 = neuston; tow type 3 = obliques) at the station. The station identification is indicated, according to the following codes: 1=1; 2=10; 3=11; 4=12; 5=13; 6=20; 7=21; 8=22; 9=23.

Figure A1.



NOTE: [illegible]

Figure A2.

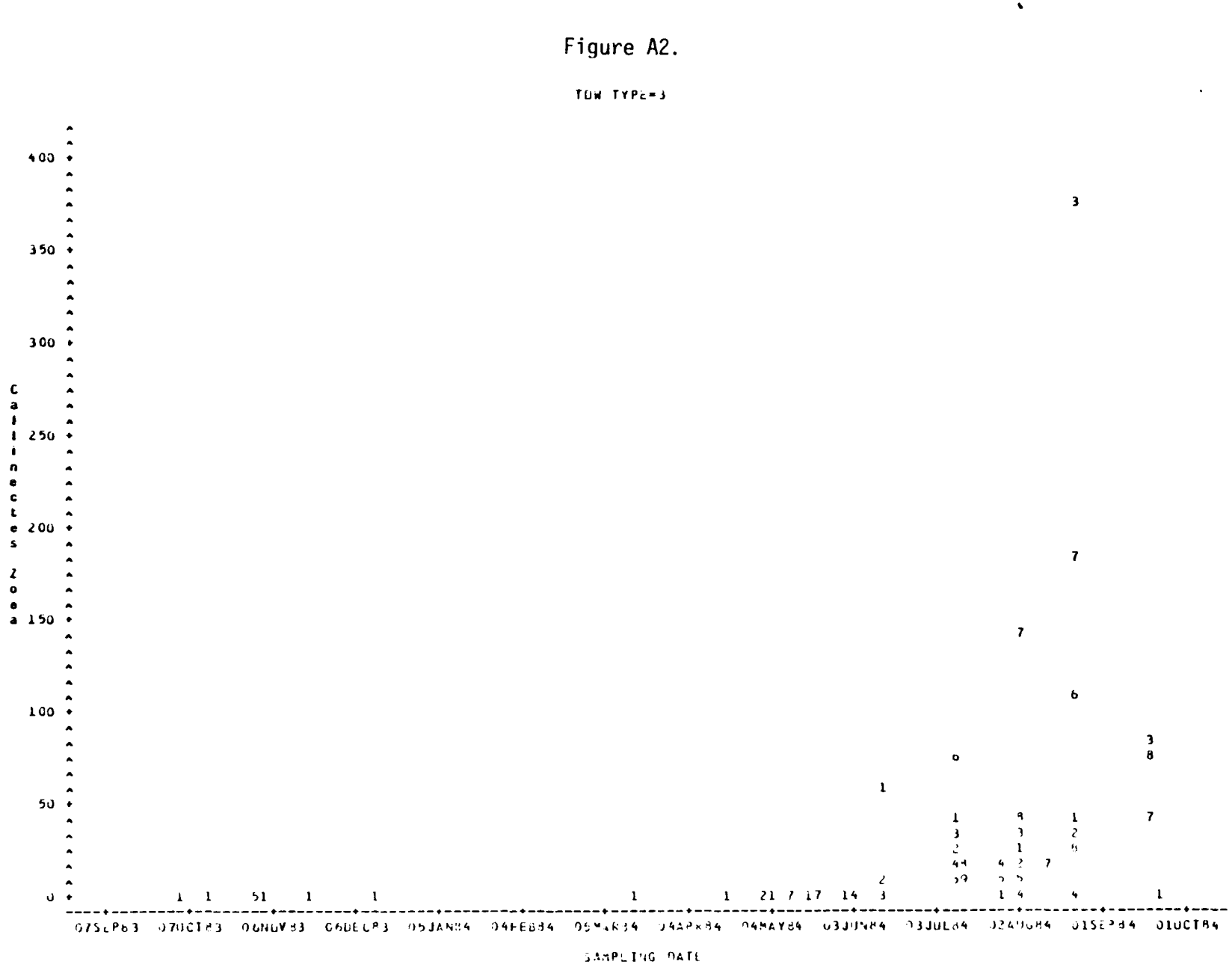
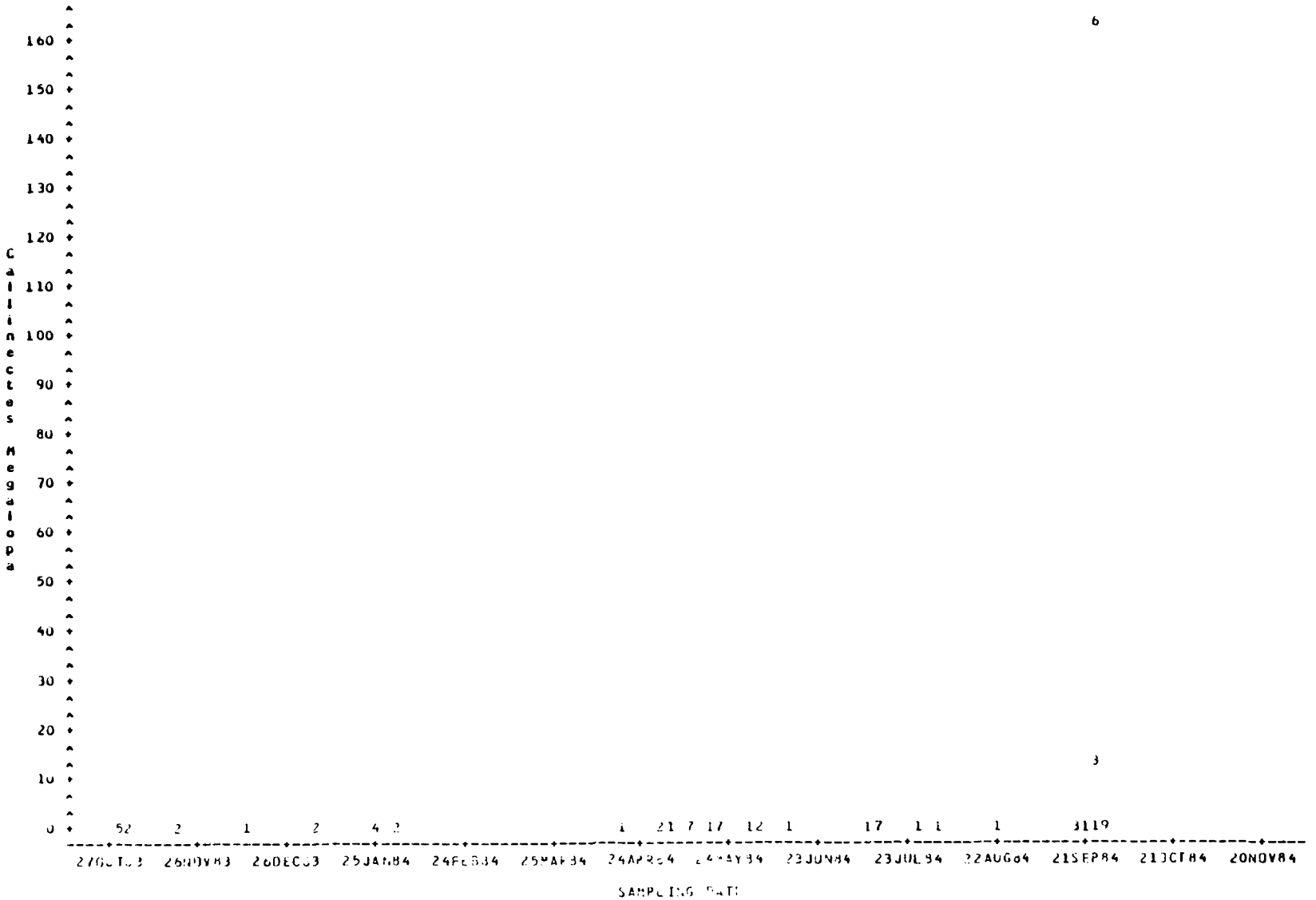

TOW TYPE=3
Calinectes zoea
400
350
300
250
200
150
100
50
0
07SEP83
07OCT83
06NOV83
06DEC83
05JAN84
04FEB84
05MAR84
04APR84
04MAY84
03JUN84
03JUL84
02AUG84
01SEP84
01OCT84
SAMPLING DATE
NOTE: 43 OBS HIDDEN

Figure A3.



NOTE: 77 TOWS HIDDEN

Figure A4.

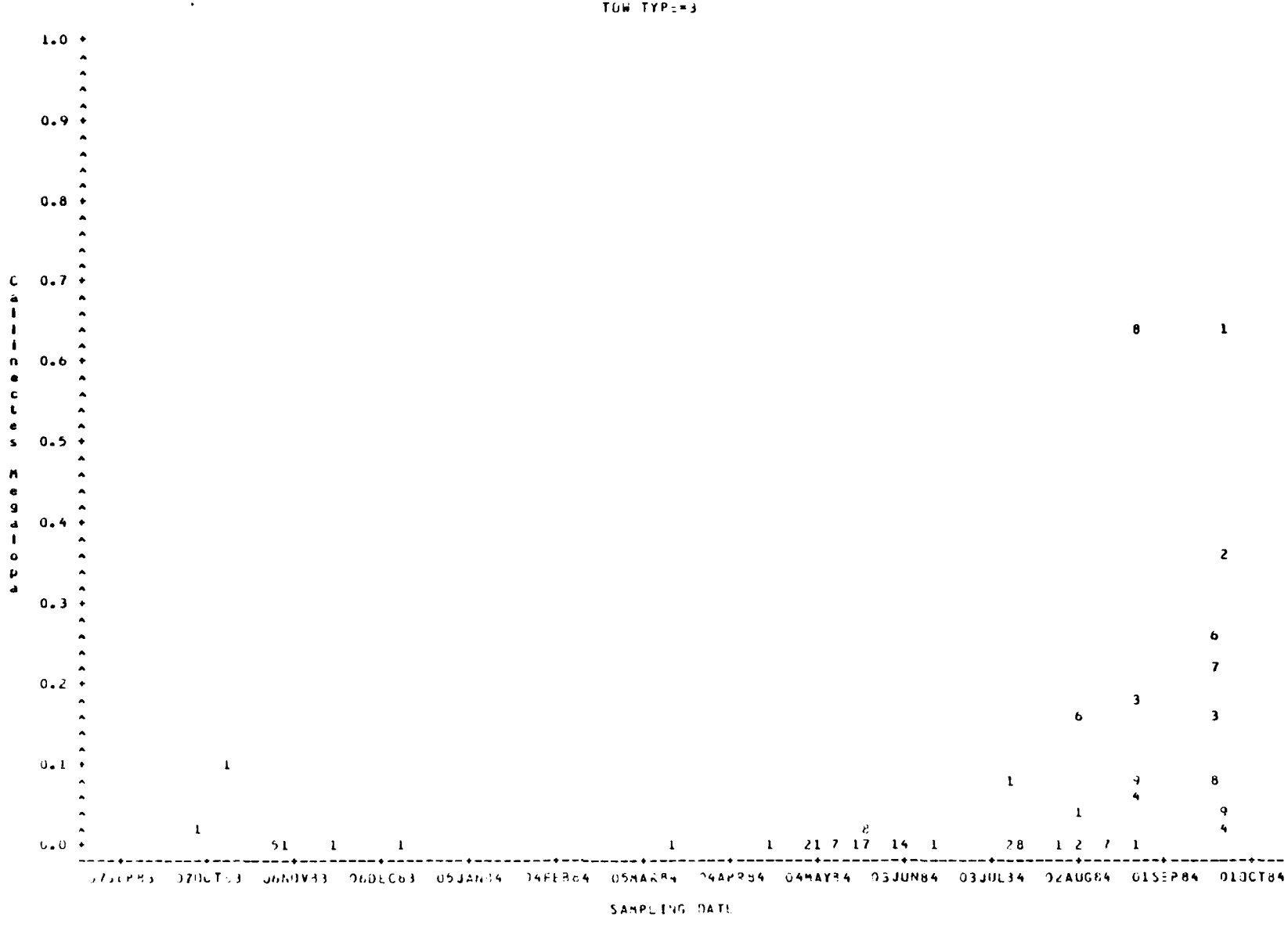

TOW TYPE=3
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Calinectes Megalopa
SAMPLING DATE

Figure A6.

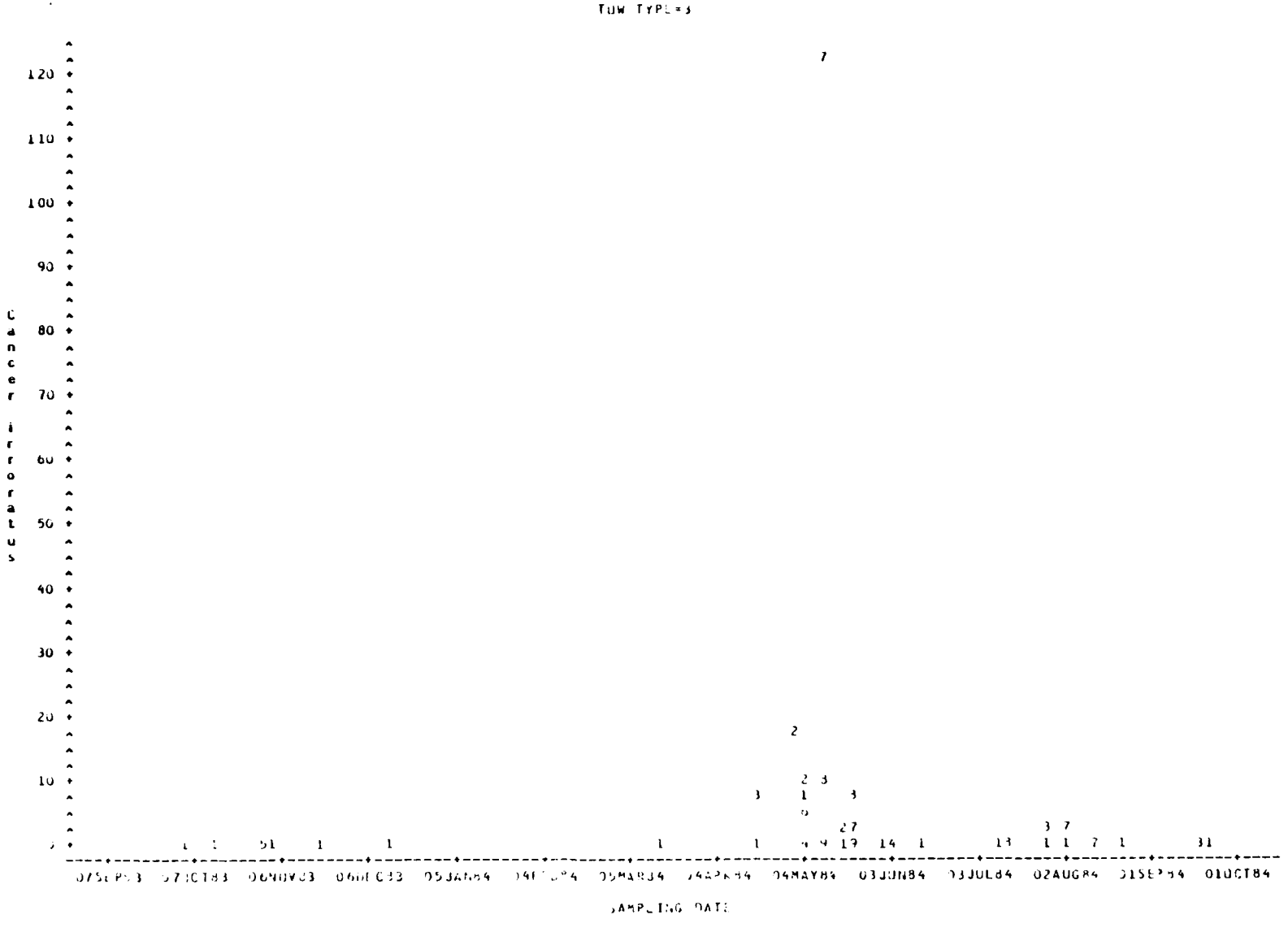

TOW TYPE=3
Cancer Ircoreats
120
110
100
90
80
70
60
50
40
30
20
10
0
07SEP83
07OCT83
06NOV83
06DEC83
05JAN84
04FEB84
05MAR84
04APR84
04MAY84
03JUN84
03JUL84
02AUG84
31SEP84
01OCT84
SAMPLING DATE

Figure A7.

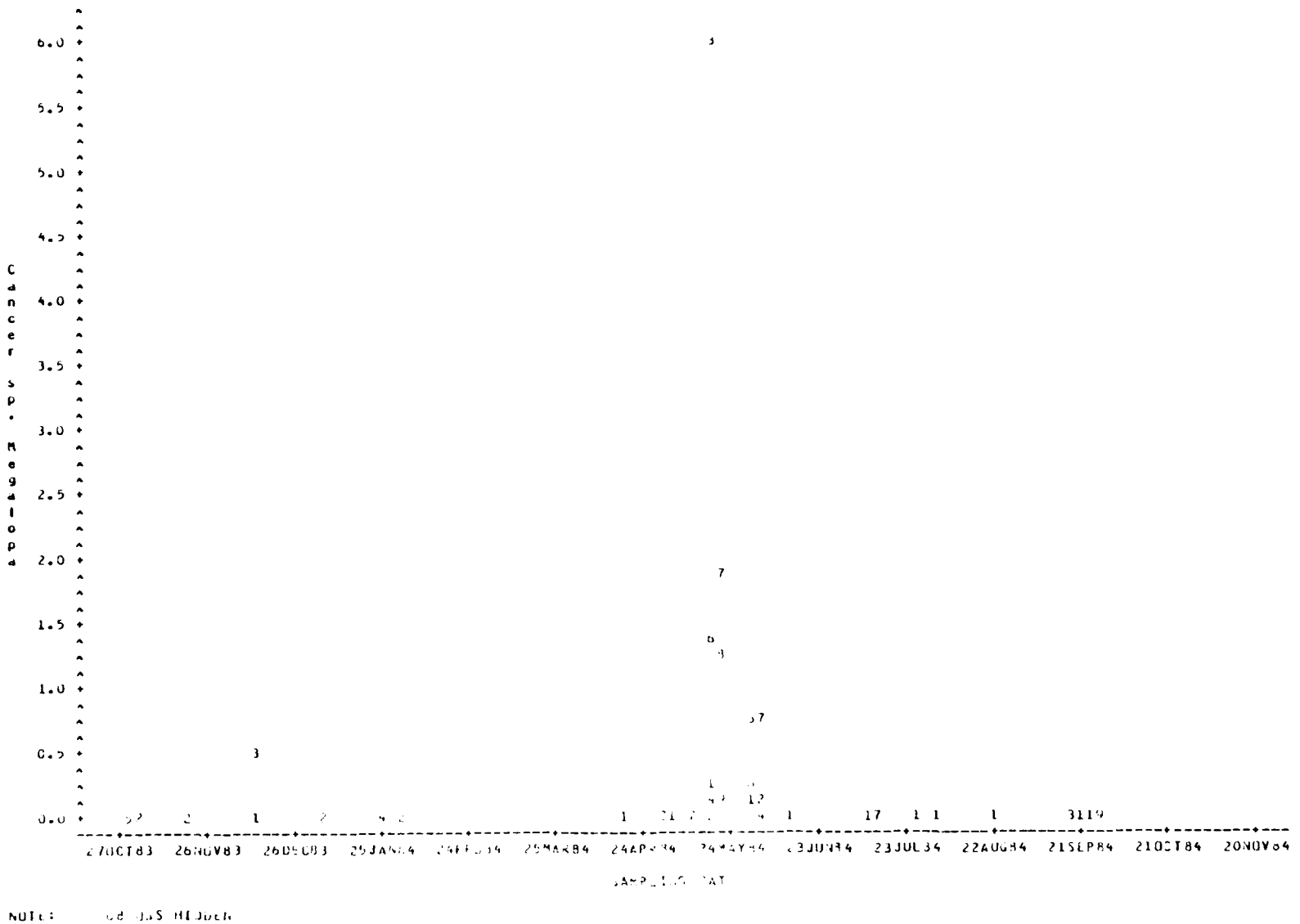

TOW TYPE=2
Concentration Mean spp.
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
27OCT83
26NOV83
26DEC83
25JAN84
24MAR84
24APR84
24MAY84
23JUN84
23JUL84
22AUG84
21SEP84
21OCT84
20NOV84
SAMPLING DATE
NOTE:

Figure A8.

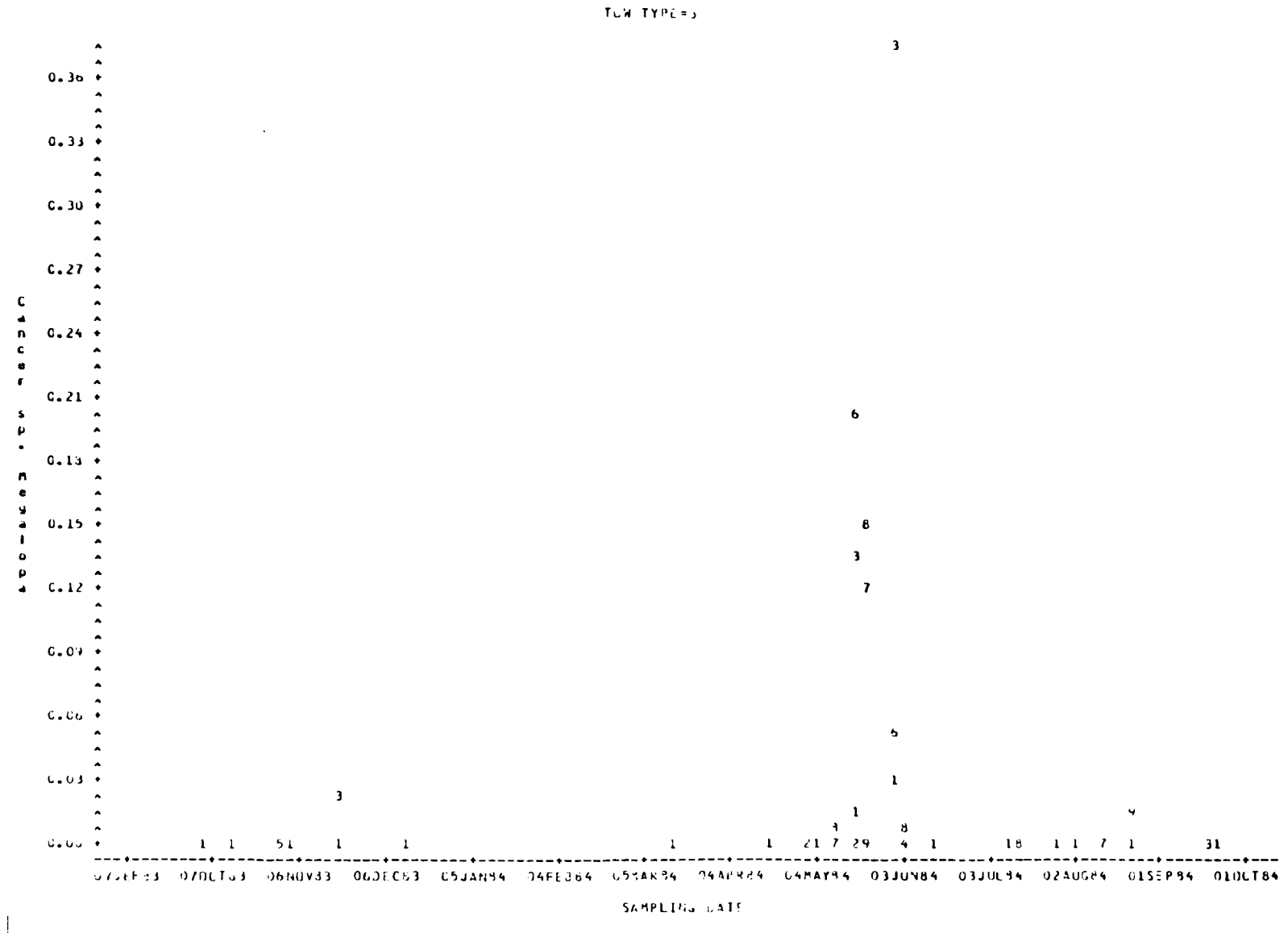

TOW TYPE=3
Concentration - organisms/m3
0.36
0.33
0.30
0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
0.03
0.00
SAMPLING DATE
07OCT83
06NOV83
06DEC83
05JAN84
04FEB84
03JUN84
03JUL84
02AUG84
01SEP84
01OCT84
NOTE: 96 OBS HIDDEN.

Figure A9.

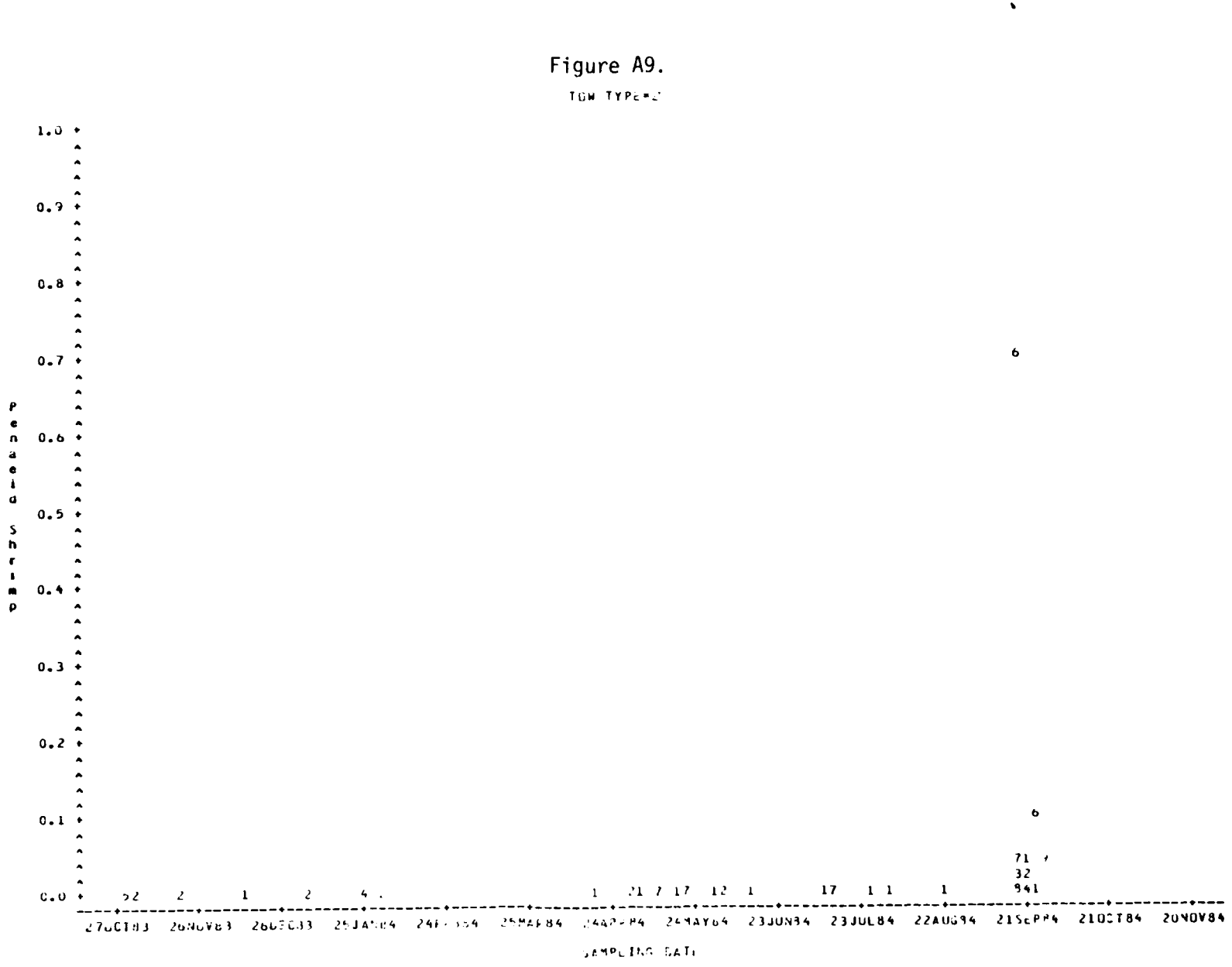

TOW TYPE=2
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Penaeid Shrimp
>2
2
1
2
4
1
21
7
17
12
1
17
1
1
1
6
6
71
32
941
27OCT83
26NOV83
26DEC83
29JAN84
24FEB84
25MAR84
24APR84
24MAY84
23JUN84
23JUL84
22AUG84
21SEP84
21OCT84
20NOV84
SAMPLING DATE
NOTE: 73 DBS REJECTED

Figure A10.

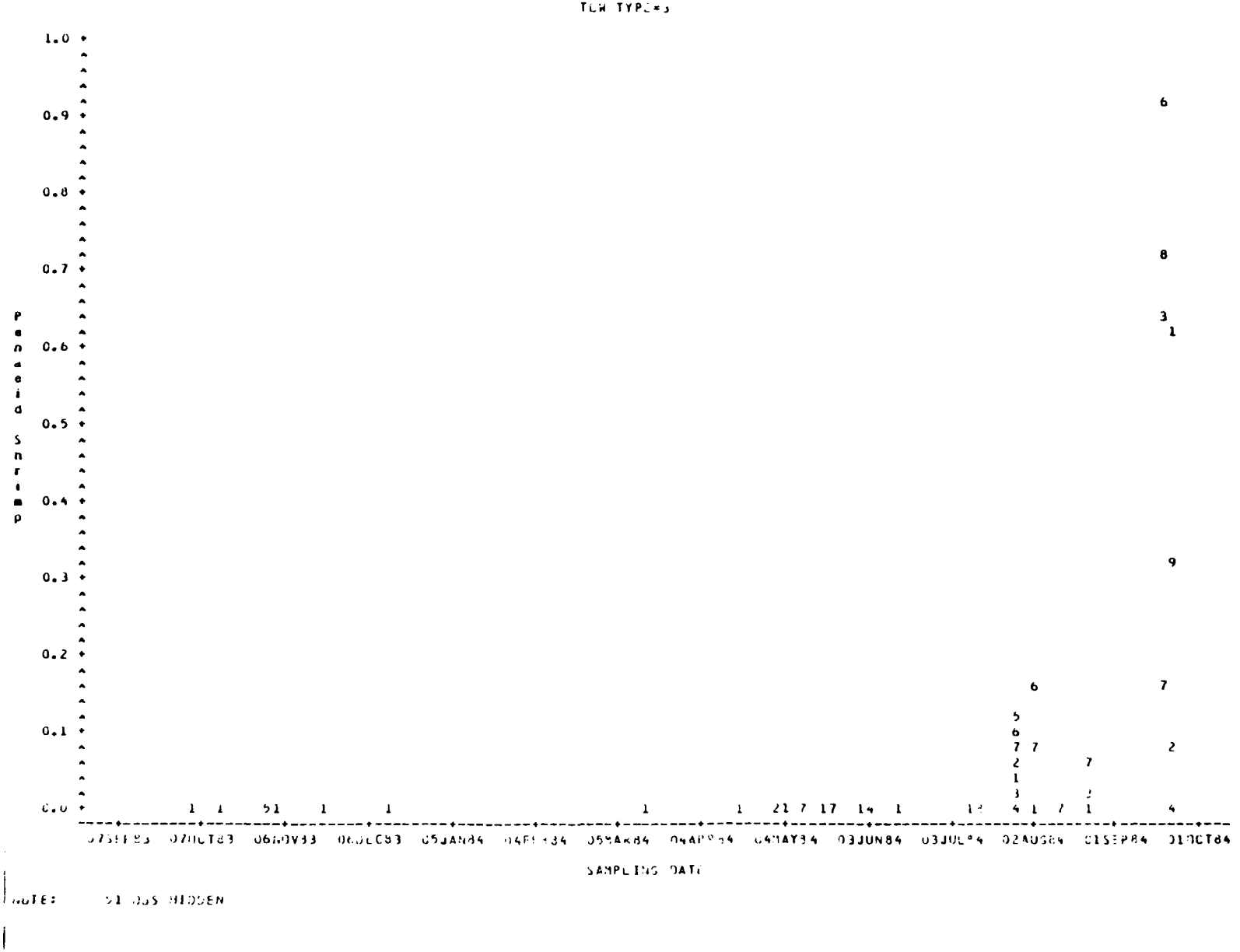
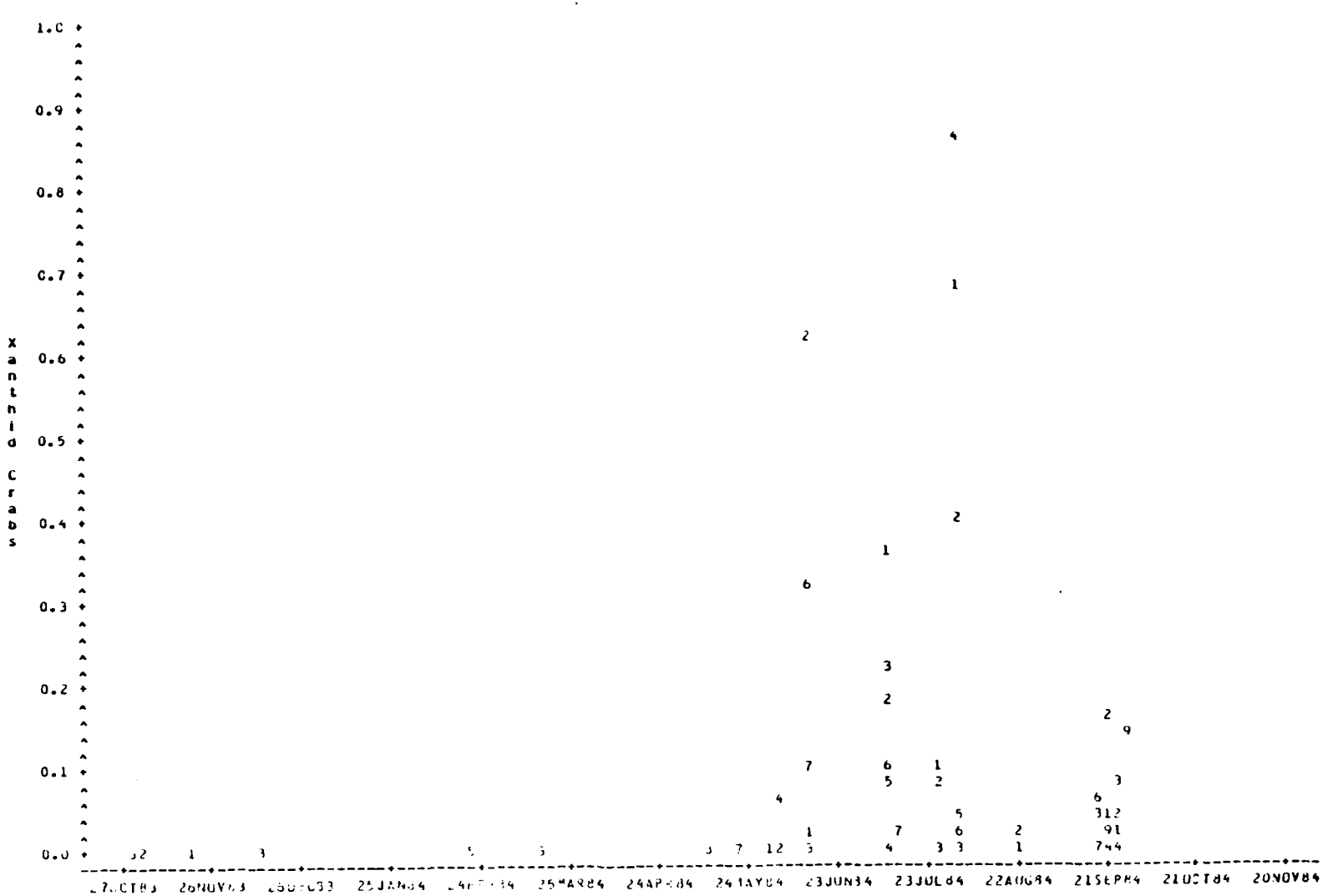

TCM TYPE=3
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Panaeid Snap
SAMPLING DATE
NOTE: 91 OBS HIDDEN

Figure A11.



NOTE: 32 OBS HIDDEN

Figure A12.


TCM TYPE=3
25.0
22.5
20.0
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
Expanded Cross
07SEP83
07OCT83
06NOV83
06DEC83
05JAN84
04FEB84
03MAR84
04APR84
04MAY84
03JUN84
03JUL84
02AUG84
01SEP84
01OCT84
SAMPLING DATE
NOTE: 39 OBS HIDDEN

Figure A13.

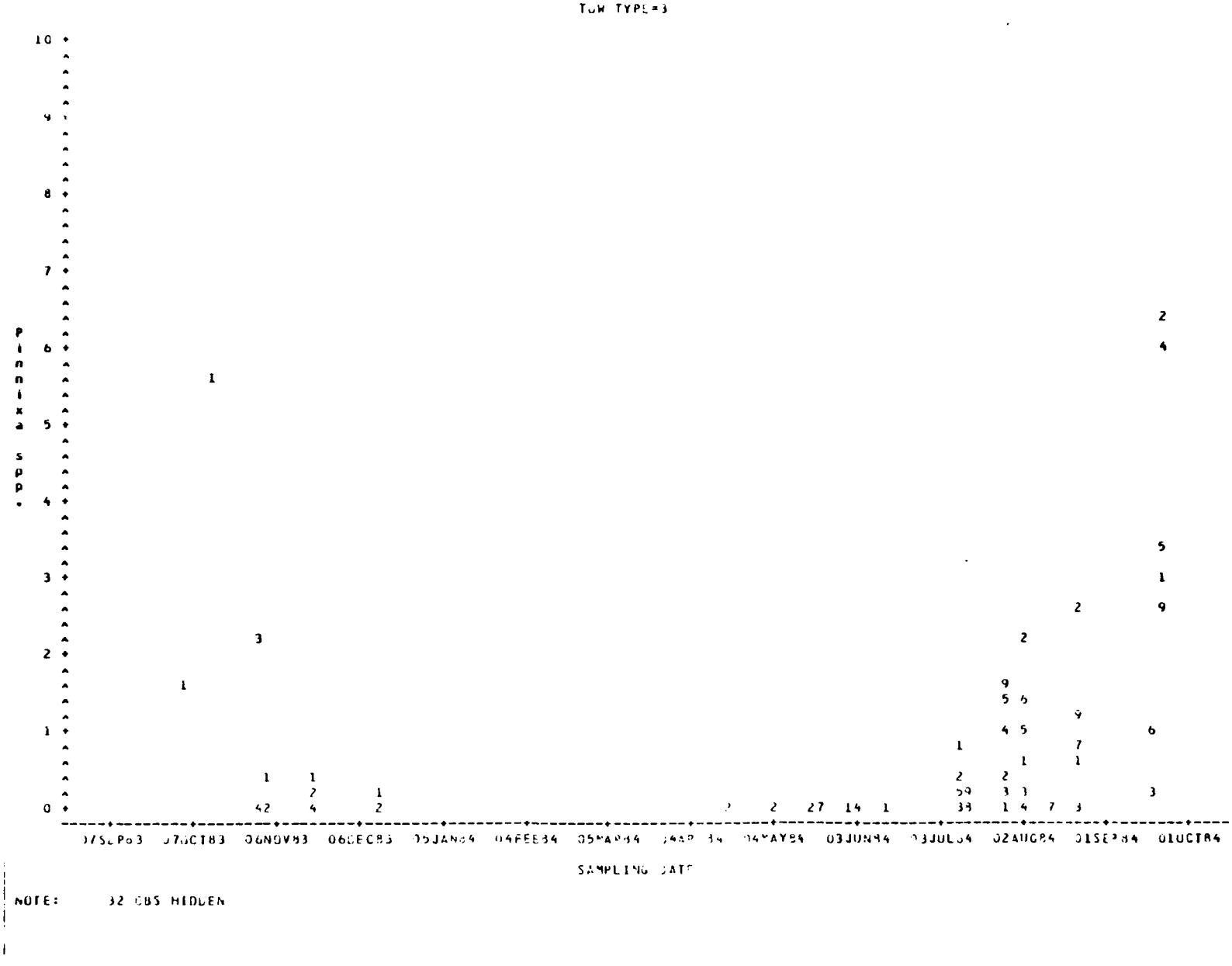
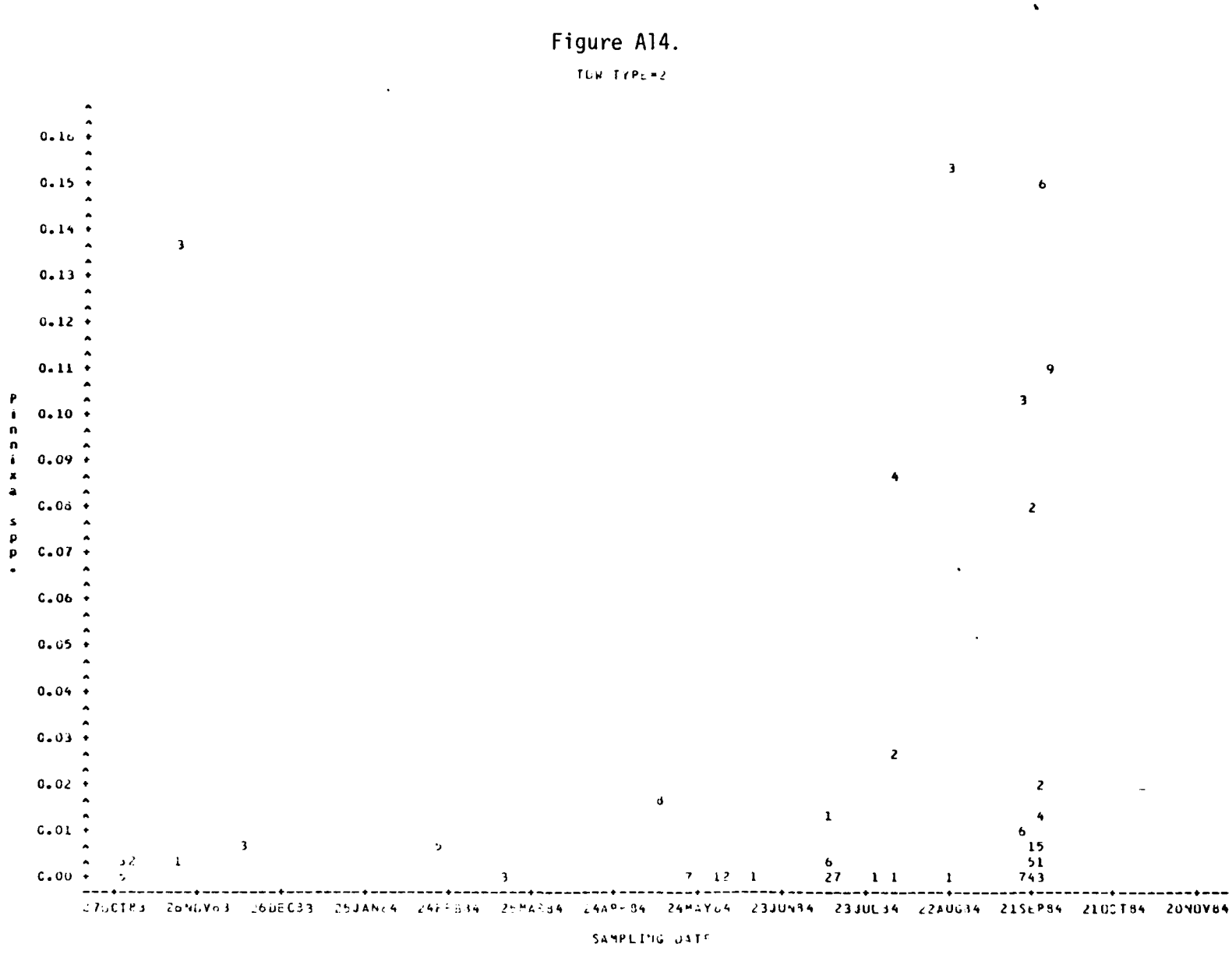
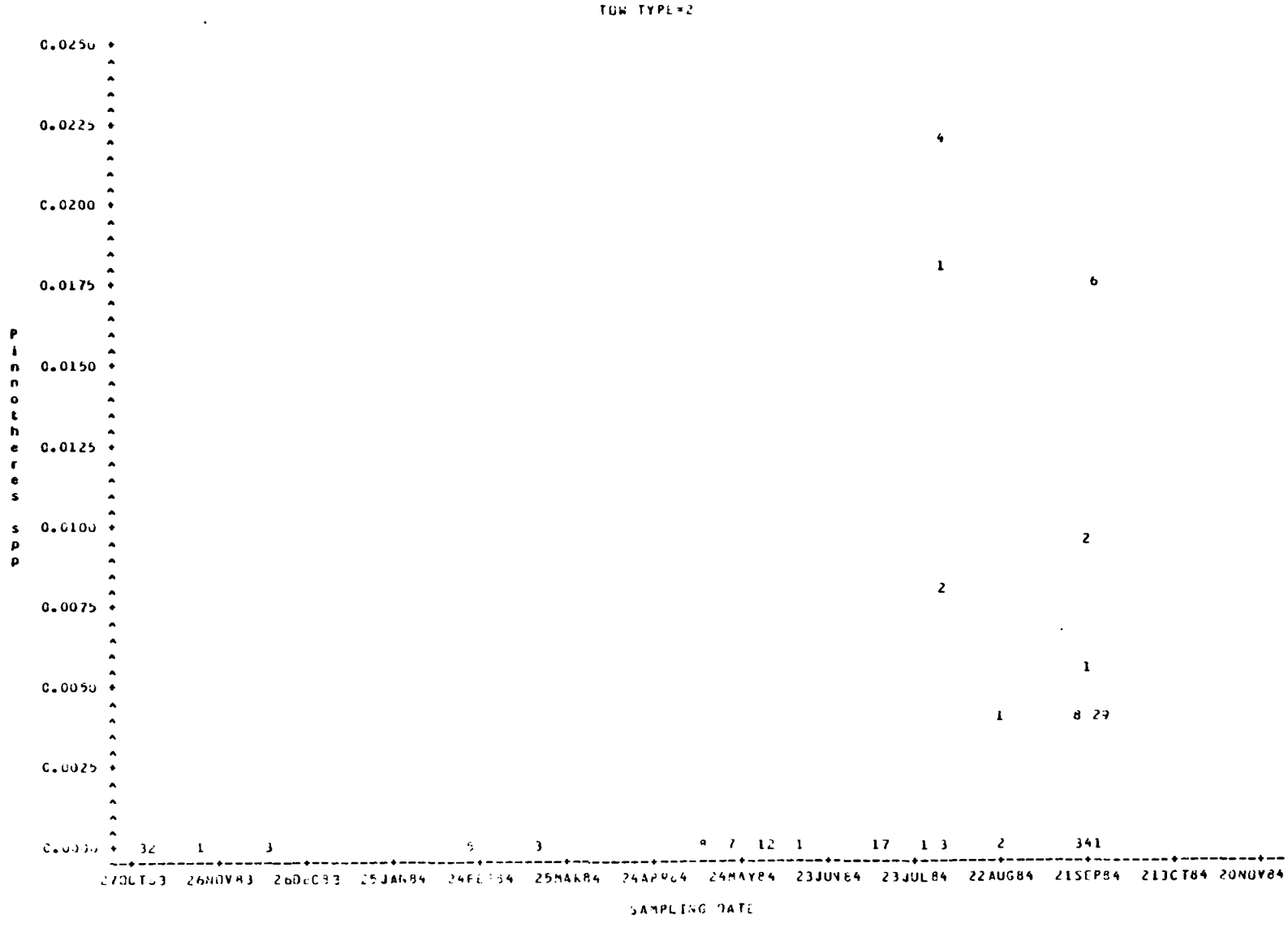

TOW TYPE=3
PLANKTA SPP.
SAMPLING DATE
07SEP83
07OCT83
06NOV83
06DEC83
05JAN84
04FEB84
05MAR84
04APR84
04MAY84
03JUN84
03JUL84
02AUG84
01SEP84
01OCT84
NOTE: 32 OBS HIDDEN

Figure A14.



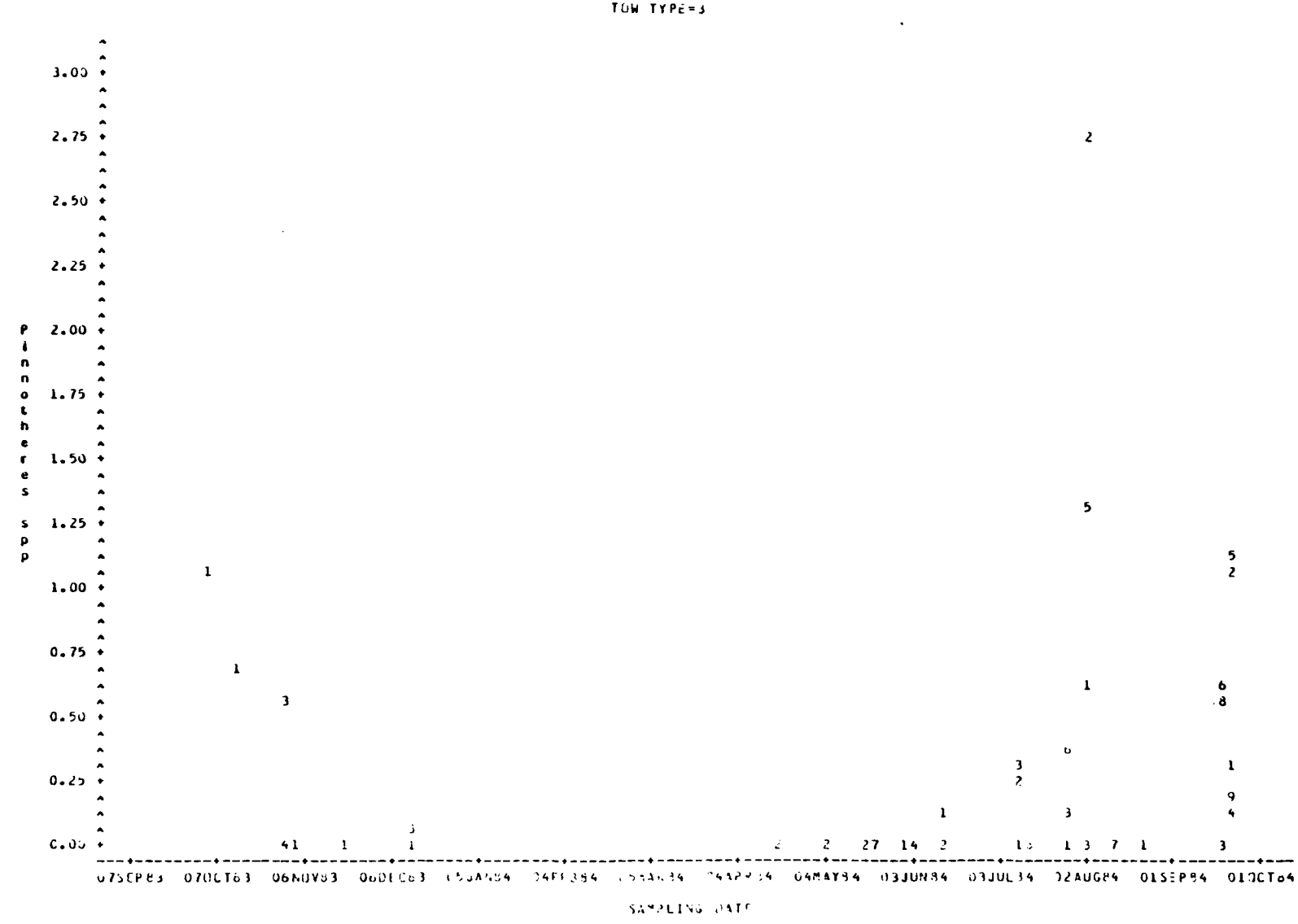
NOTE: 41 GAS HIDDEN

Figure A15.



NOTE: 49 OBS HIDDEN

Figure A16.



NOTE: 44 OBS HIDDEN

Figure A17.

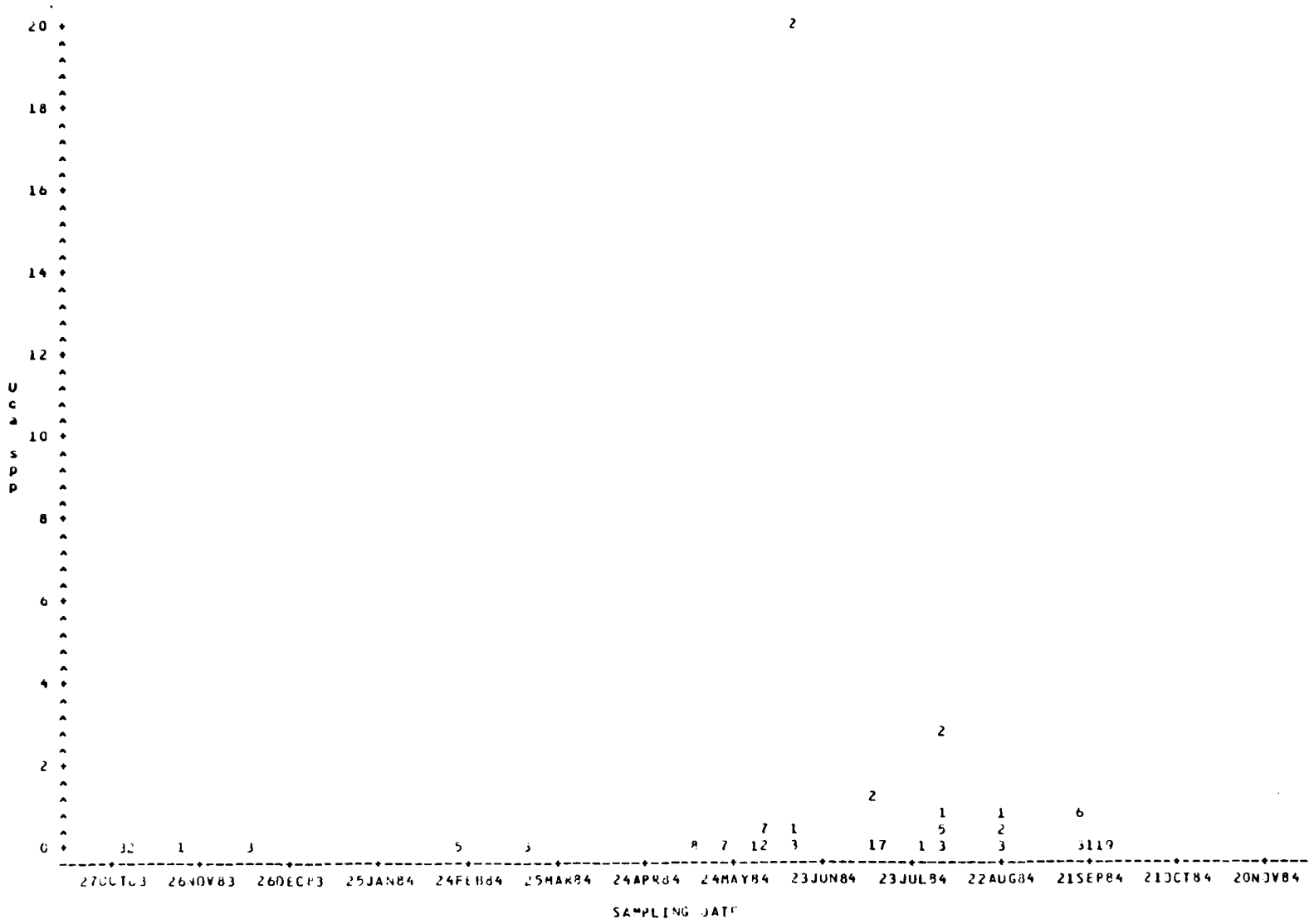

TOW TYPE=2
USPP
SAMPLING DATE
27OCT83
26NOV83
26DEC83
25JAN84
24FEB84
25MAR84
24APR84
24MAY84
23JUN84
23JUL84
22AUG84
21SEP84
21OCT84
20NOV84
NOTE: 48 OBS HIDDEN

Figure A18.

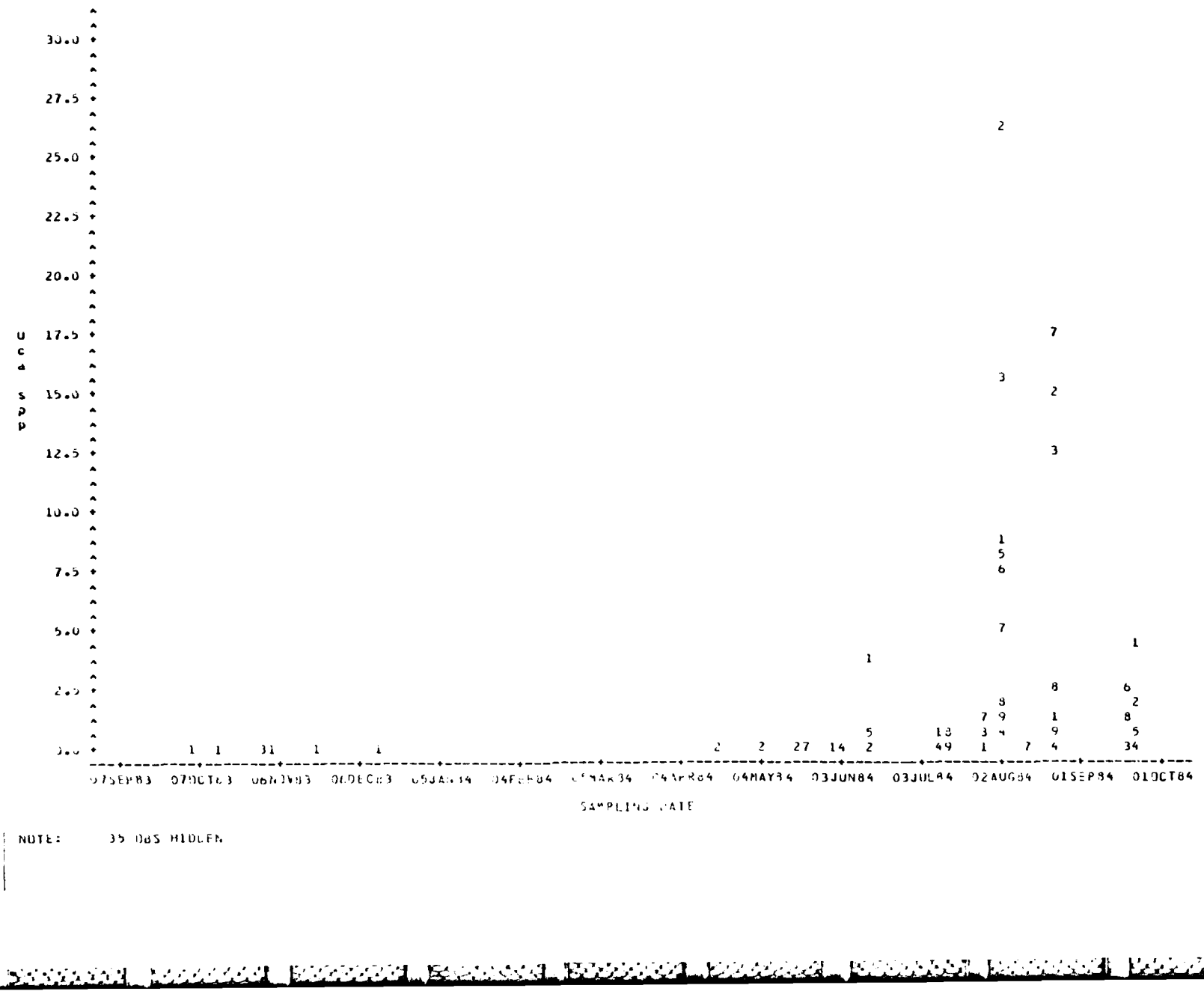
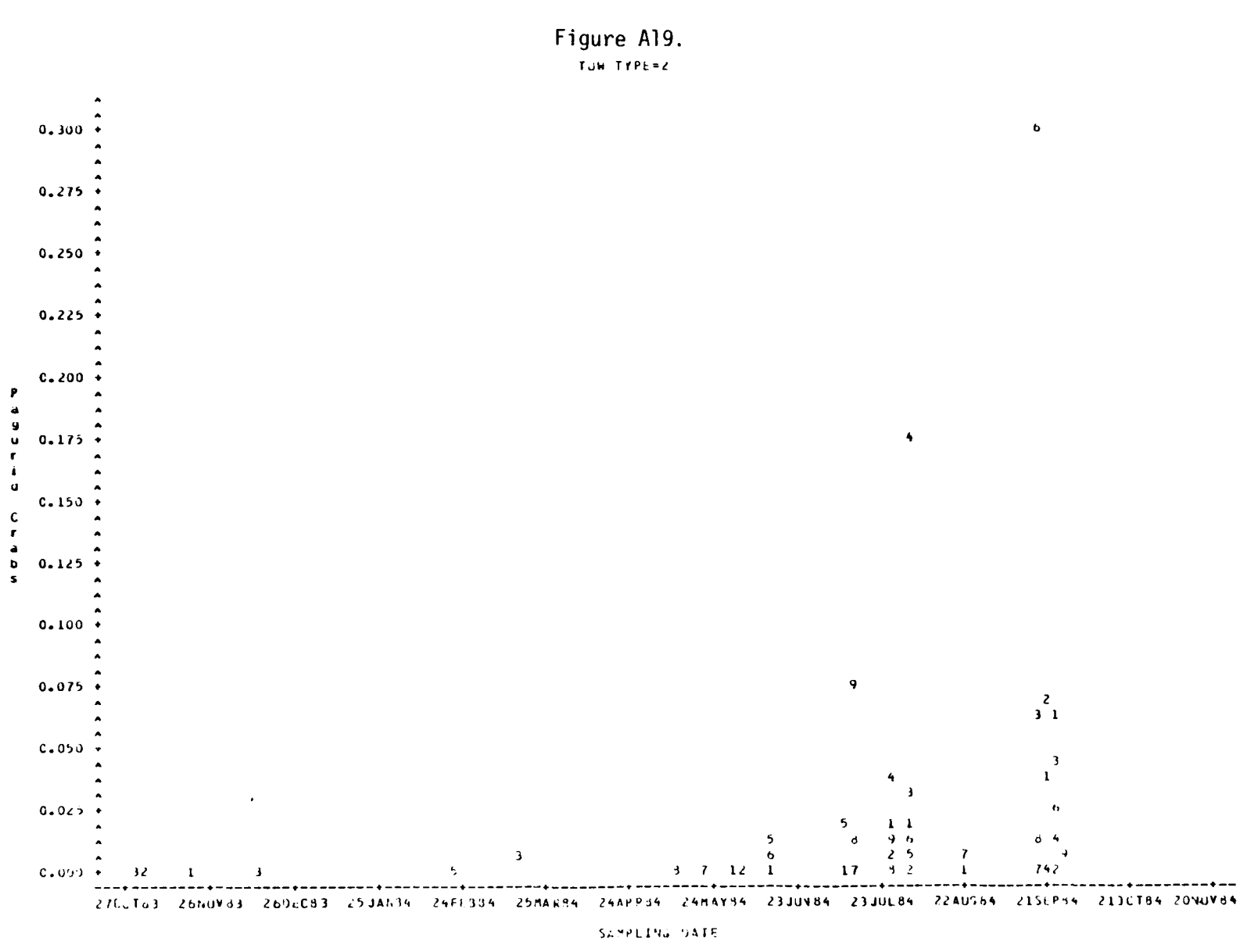

TOW TYPE=3
30.0
27.5
25.0
22.5
20.0
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
USASPP
07SEP83
07OCT83
06NOV83
04DEC83
05JAN84
04FEB84
04MAR84
04APR84
04MAY84
03JUN84
03JUL84
02AUG84
01SEP84
01OCT84
SAMPLING DATE
NOTE: 35 OBS HIDDEN

Figure A19.



NOTE: 34 DAS MISSED

Figure A20.

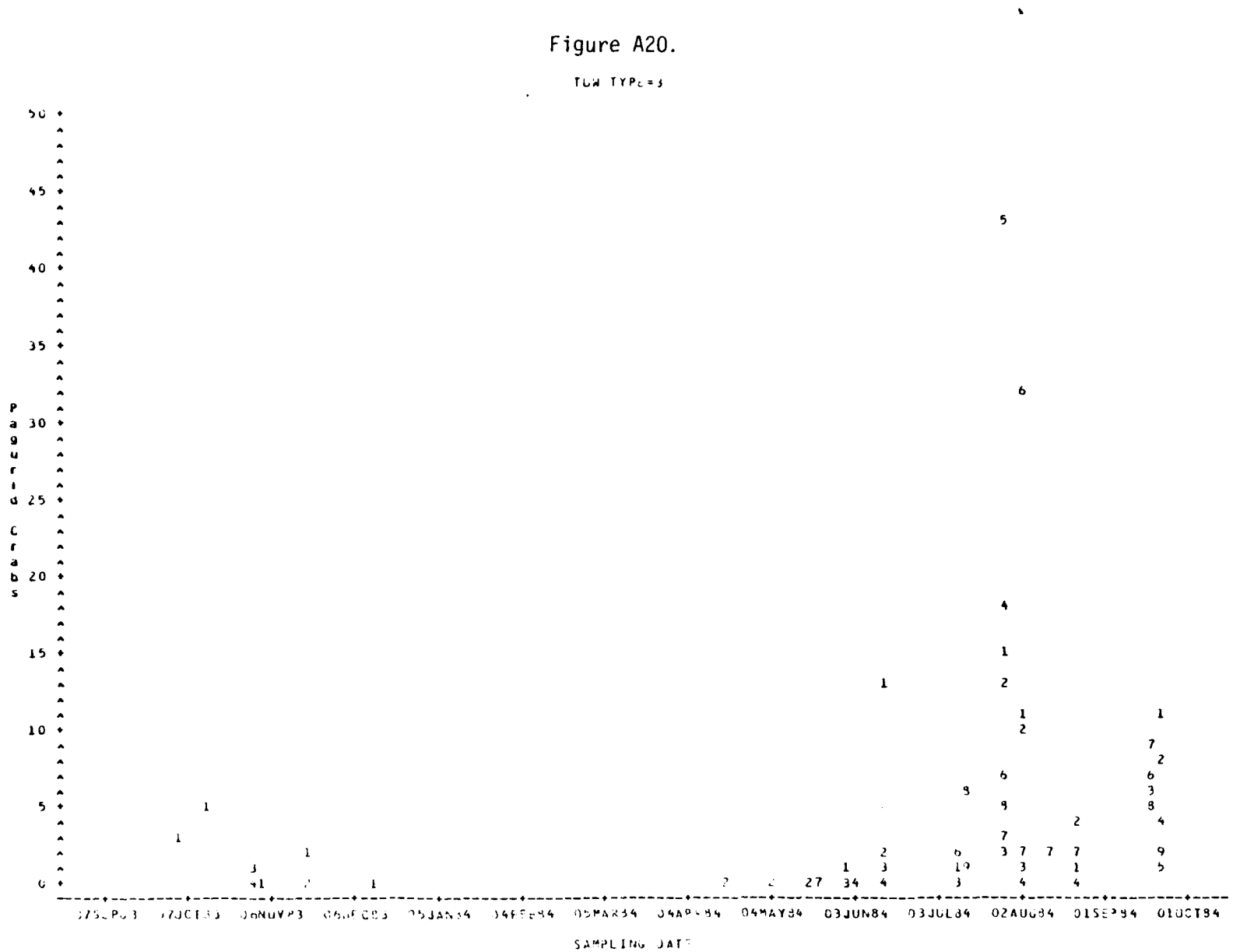
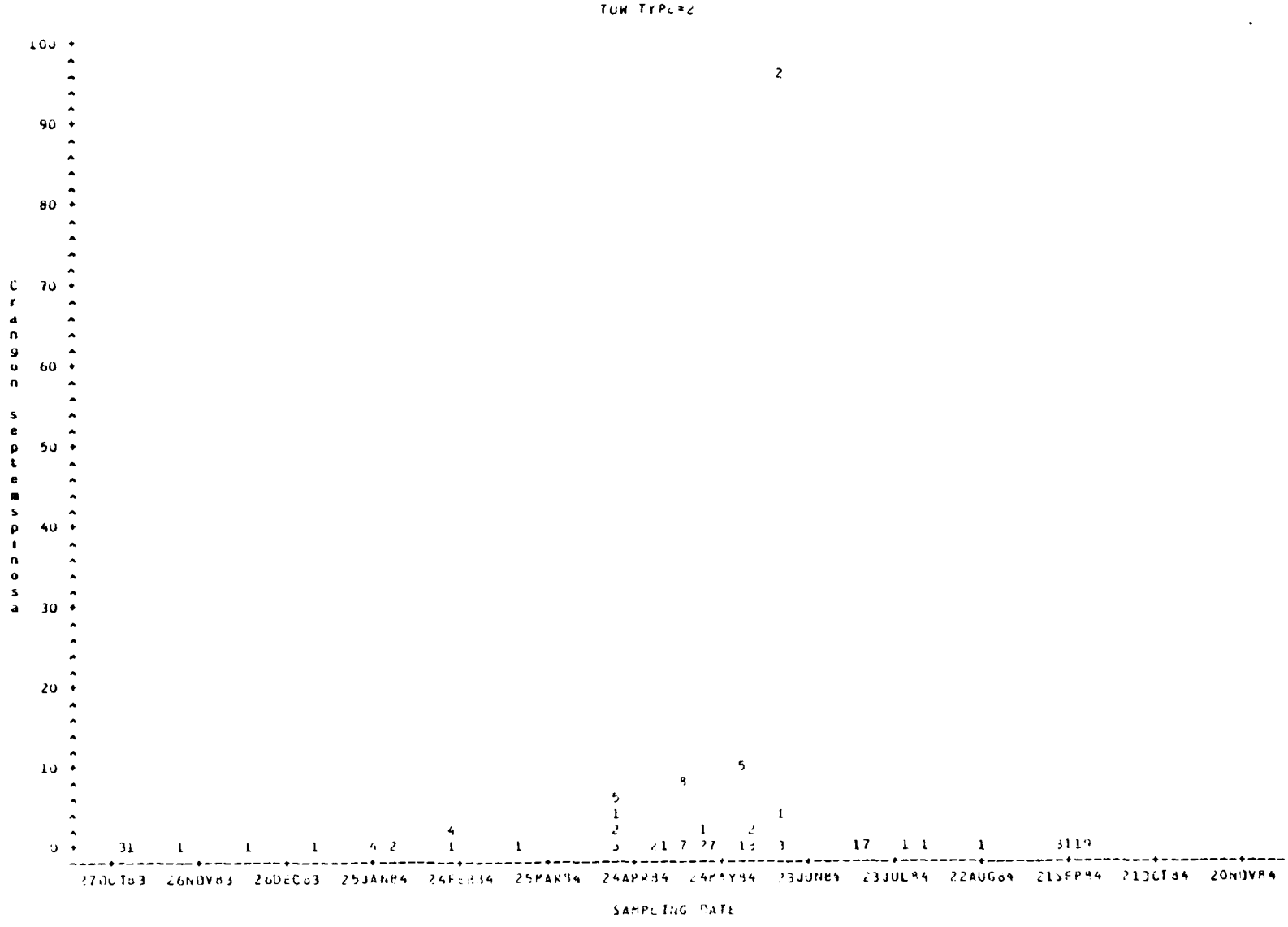
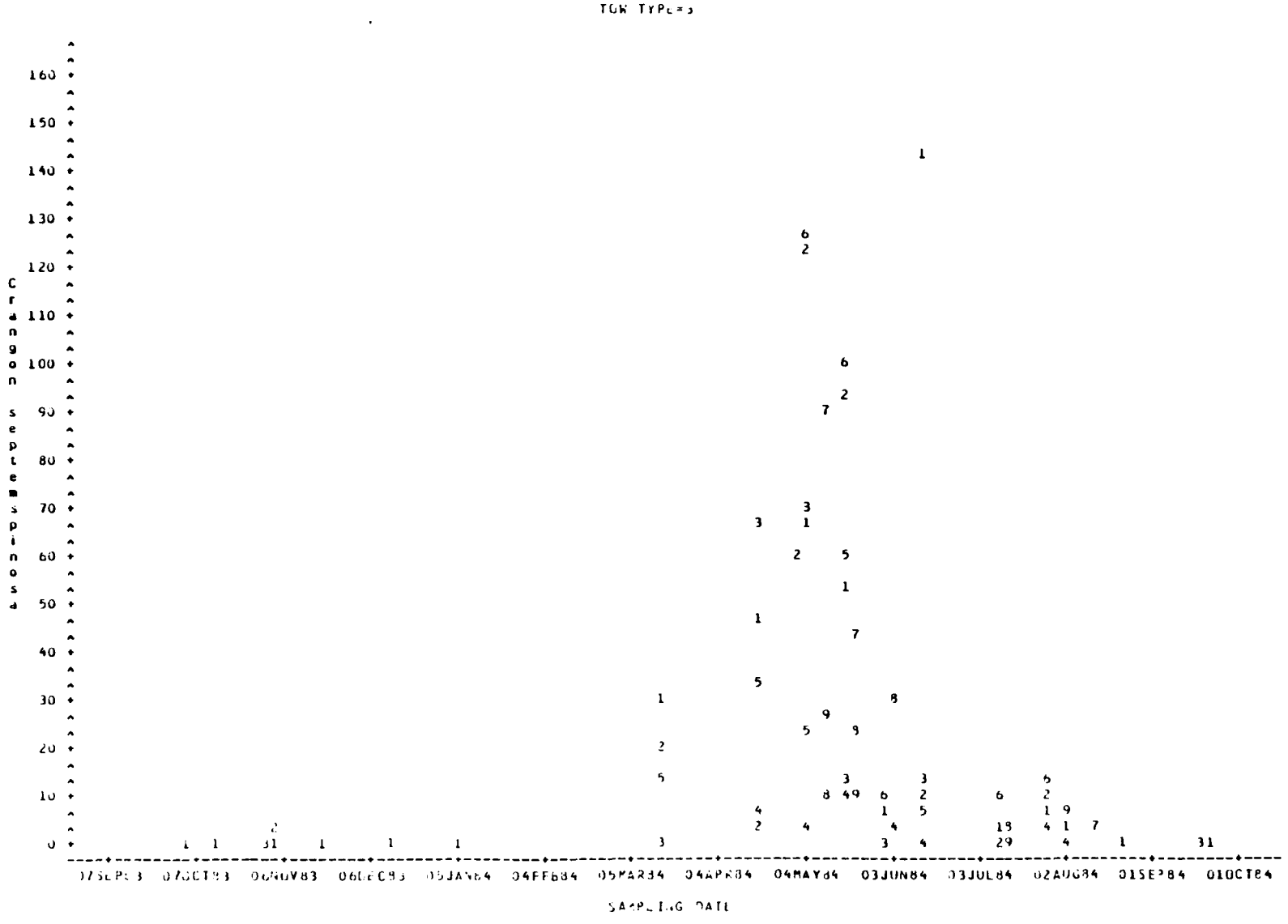

TOW TYPE=3
50
45
40
35
30
25
20
15
10
5
0
Passes Caught
03JUN84
03JUL84
02AUG84
01SEP84
01OCT84
SAMPLING DATE

Figure A21.



NOTE: 79 DAS HIDDEN

Figure A22.



NOTE: 43 333 HIDDEN

Figure A23.

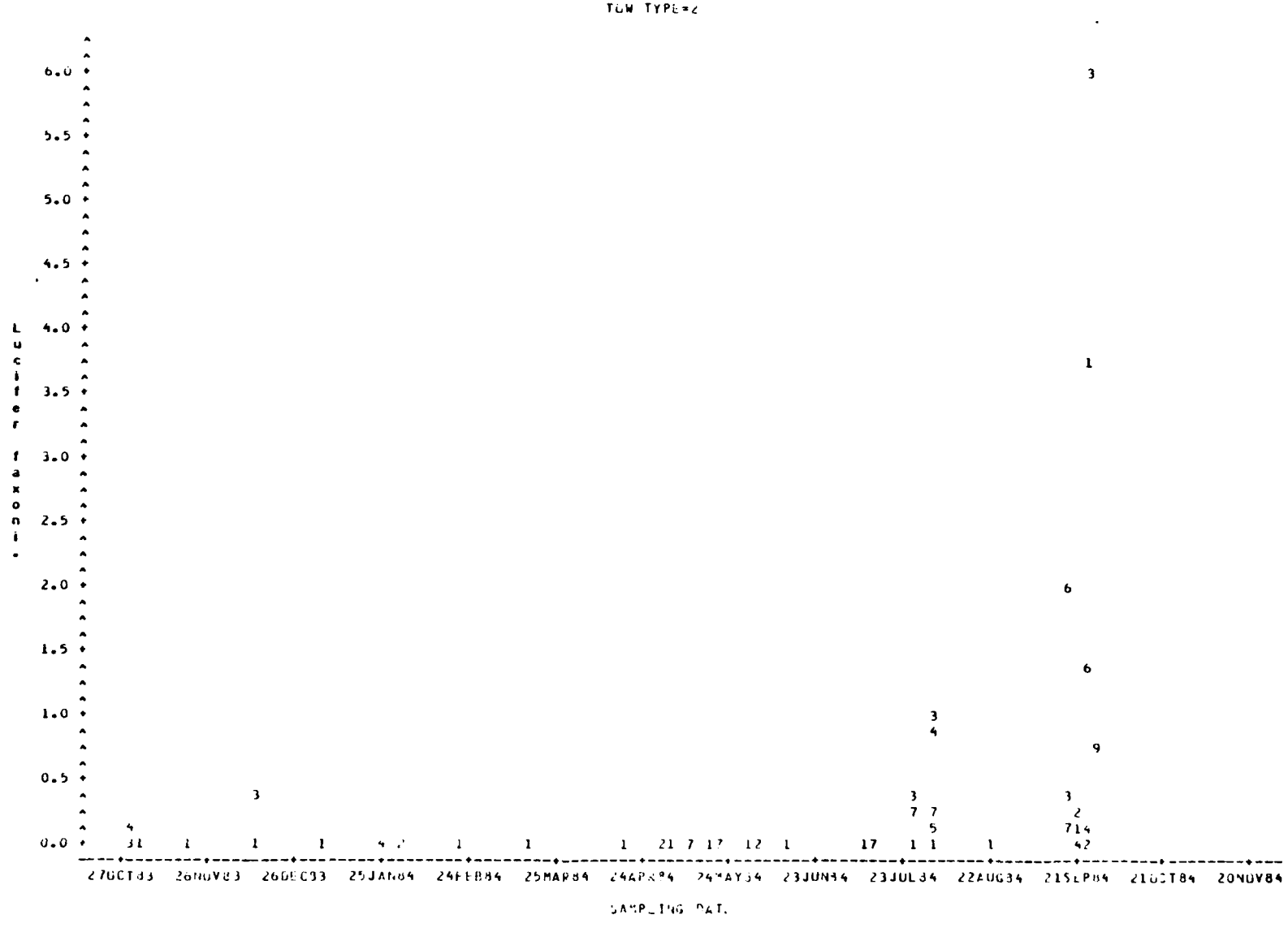

TOW TYPE=2
Lucifer faxoni
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
27OCT83
26NOV83
26DEC83
25JAN84
24FEB84
25MAR84
24APR84
24MAY84
23JUN84
23JUL84
22AUG84
21SEP84
21OCT84
20NOV84
SAMPLING DAT.
NOTE: 73 DAS HIDDEN

Figure A24.

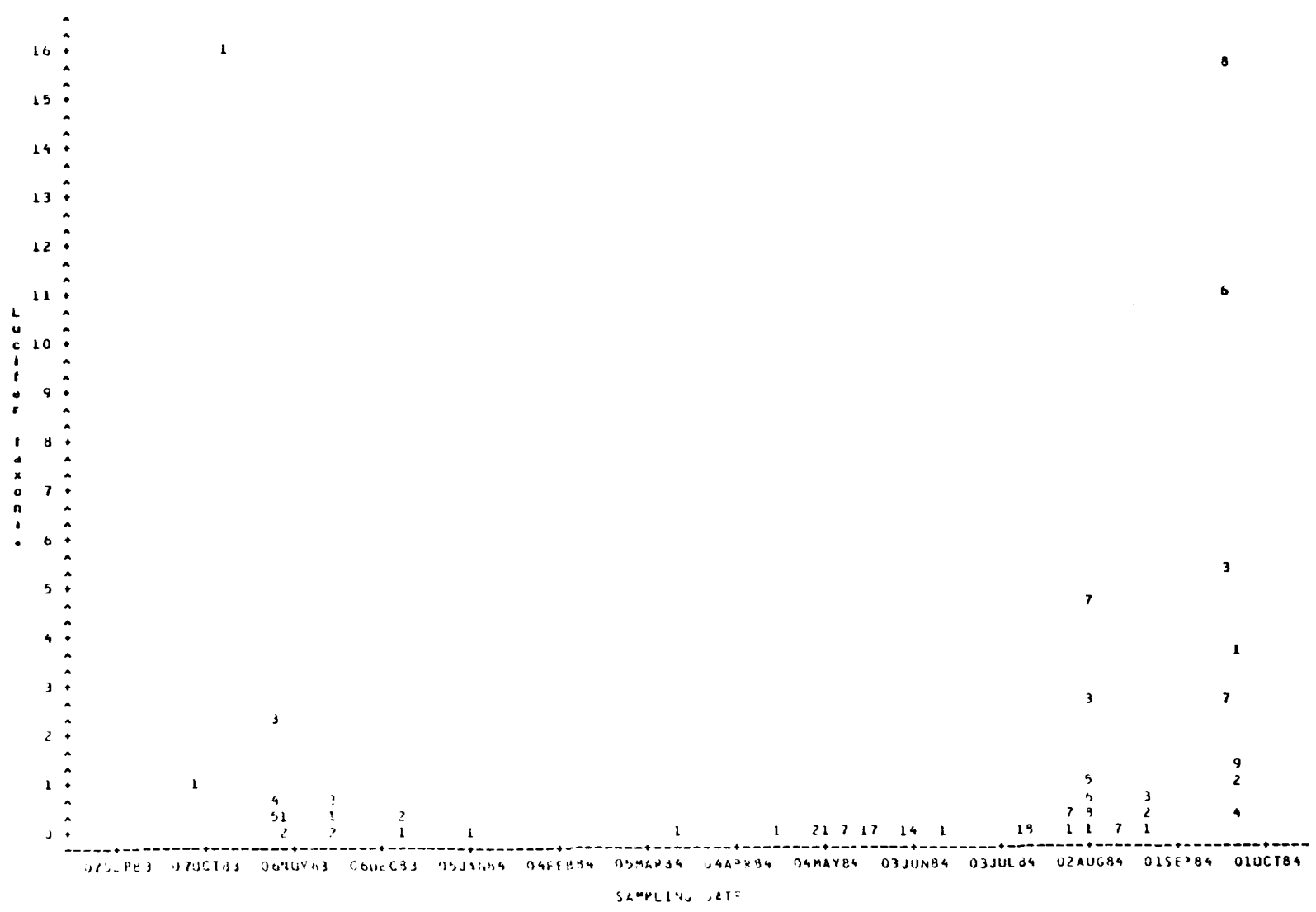
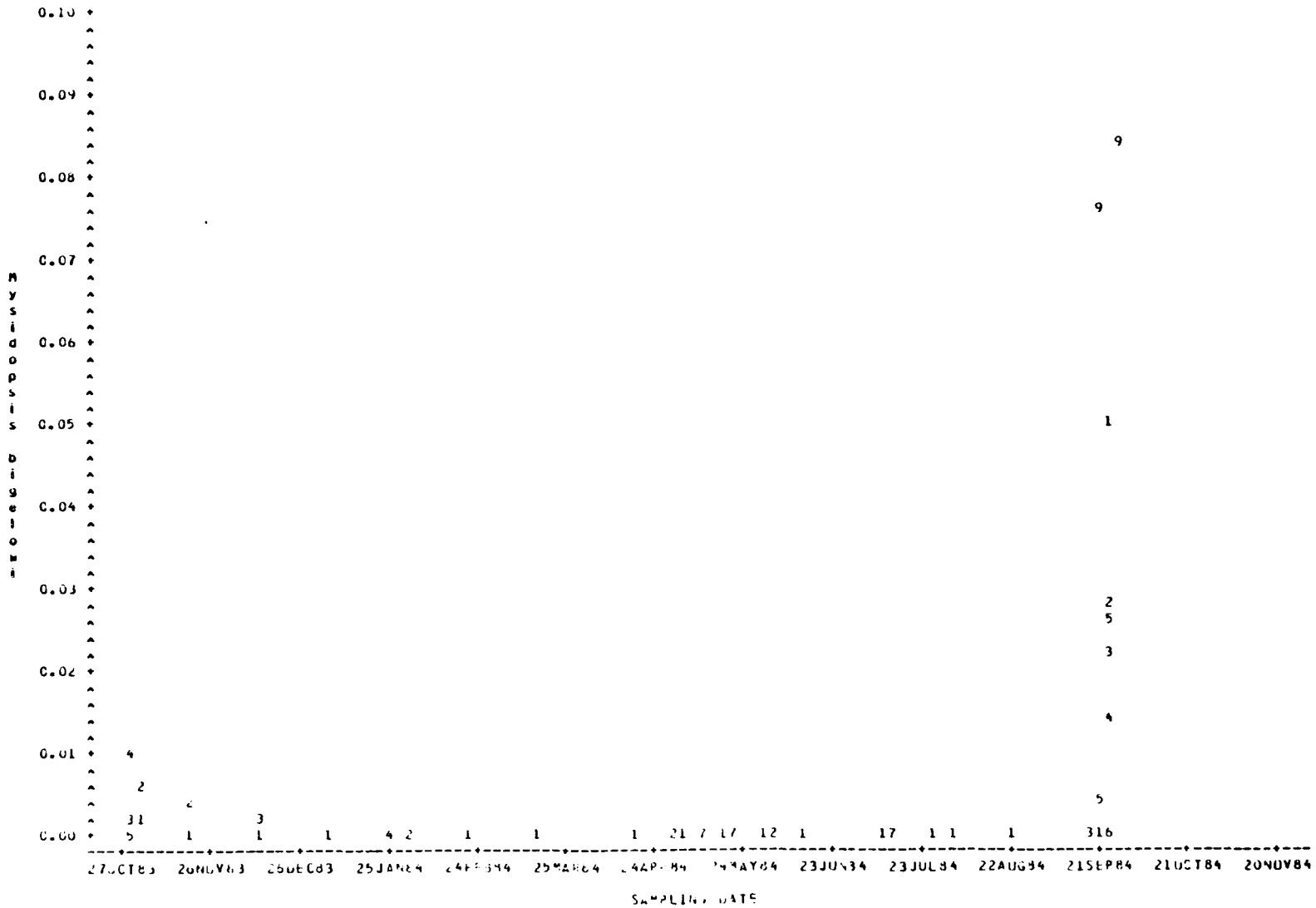

TOW TYPE=3
Number of Tows
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
07SEP83
07OCT83
06NOV83
06DEC83
05JAN84
04FEB84
05MAR84
04APR84
04MAY84
03JUN84
03JUL84
02AUG84
01SEP84
01OCT84
SAMPLING DATE
NOTE: 50 OBS HIDDEN

Figure A25.



NOTE: 77 DCS HIDDEN

Figure A26.

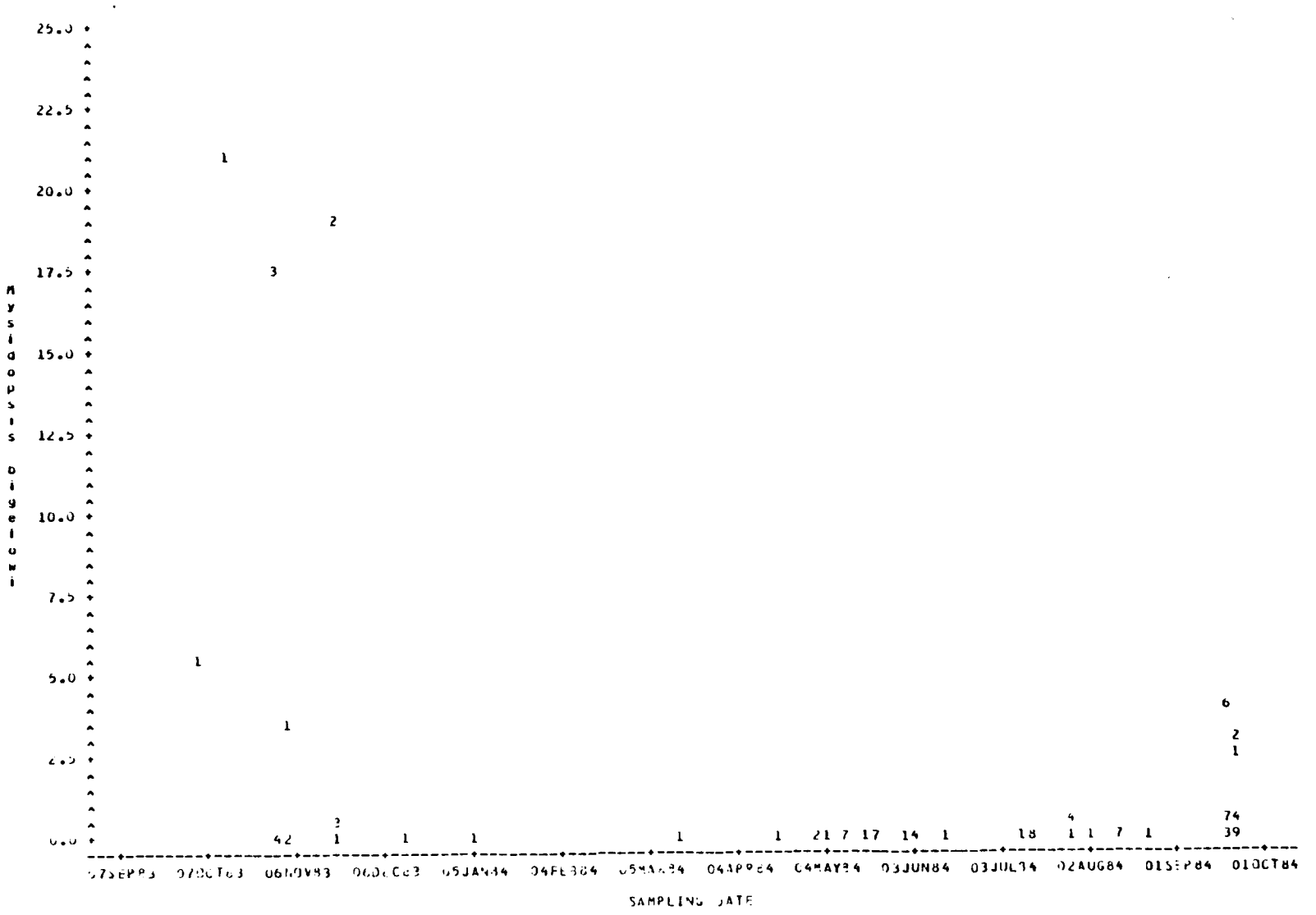

TOW TYPE=3
25.0
22.5
20.0
17.5
15.0
12.5
10.0
7.5
5.0
0.0
SAMPLING DATE
03JUN84
03JUL84
02AUG84
01OCT84

Figure A27.

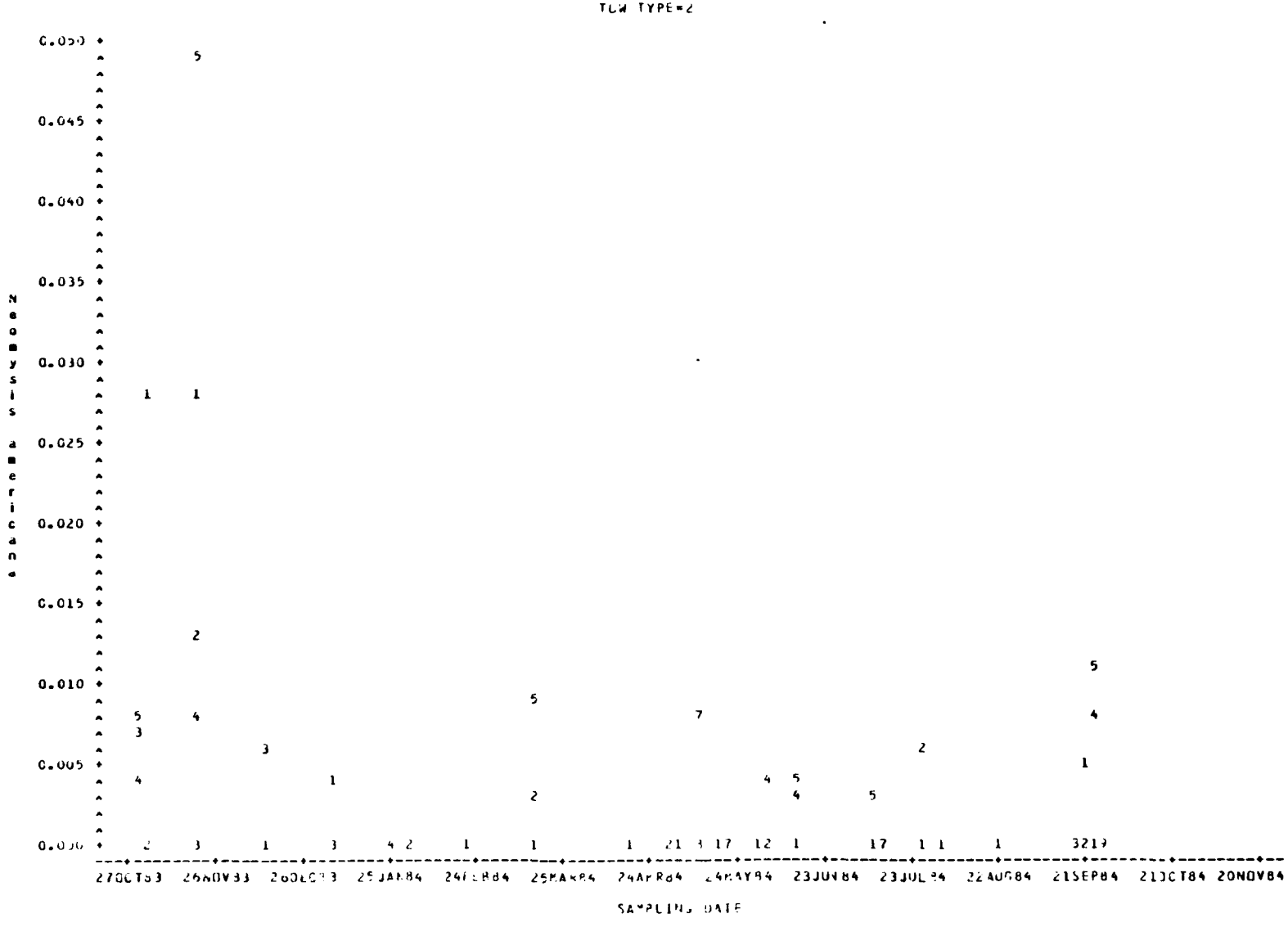

TCW TYPE=2
Neomysis americana
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
27OCT83
26NOV83
26DEC83
25JAN84
24FEB84
25MAR84
24APR84
24MAY84
23JUN84
23JUL84
22AUG84
21SEP84
21OCT84
20NOV84
SAMPLING DATE
NOTE: 69 OBS HIDDEN

Figure A28.

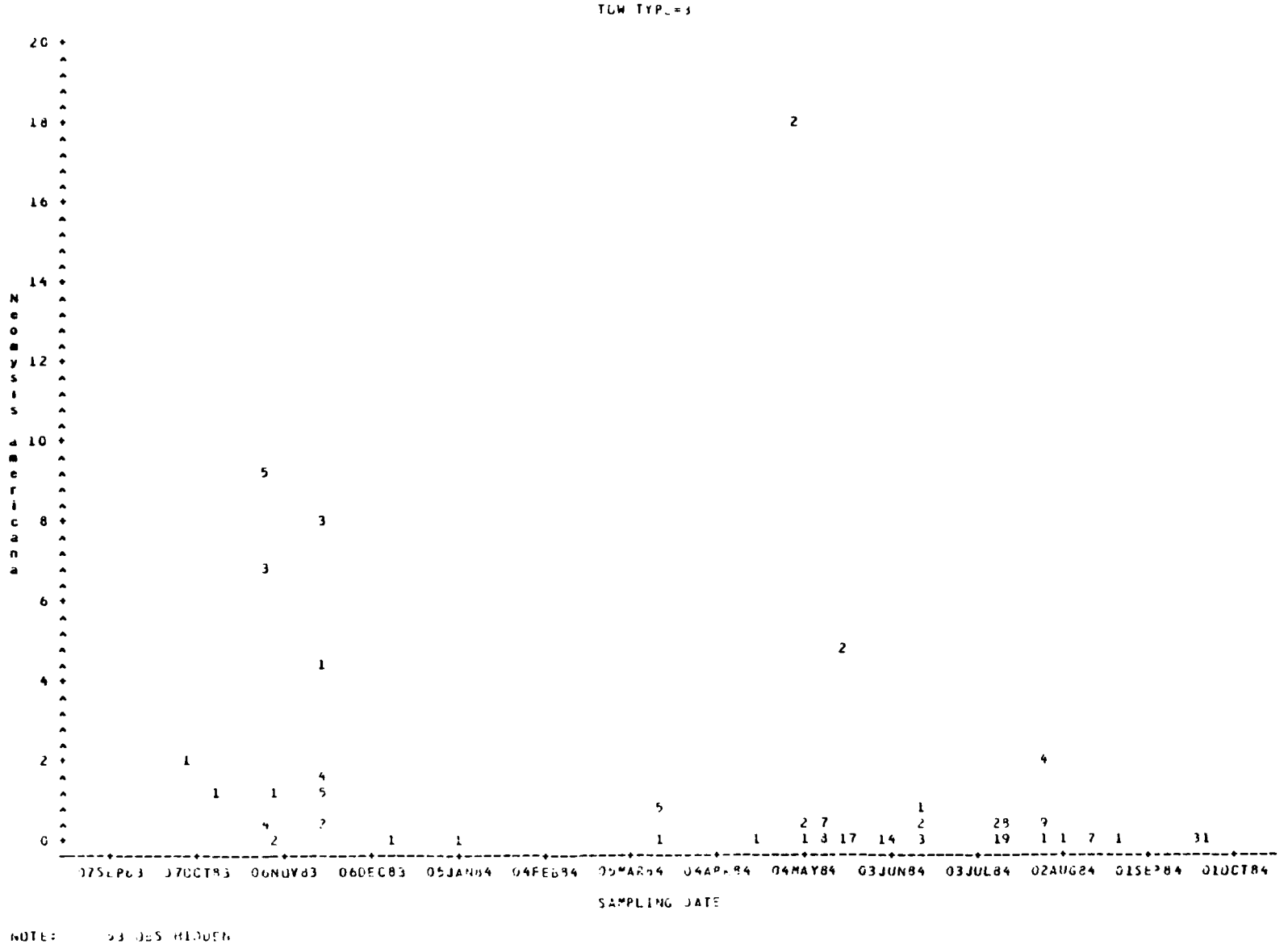
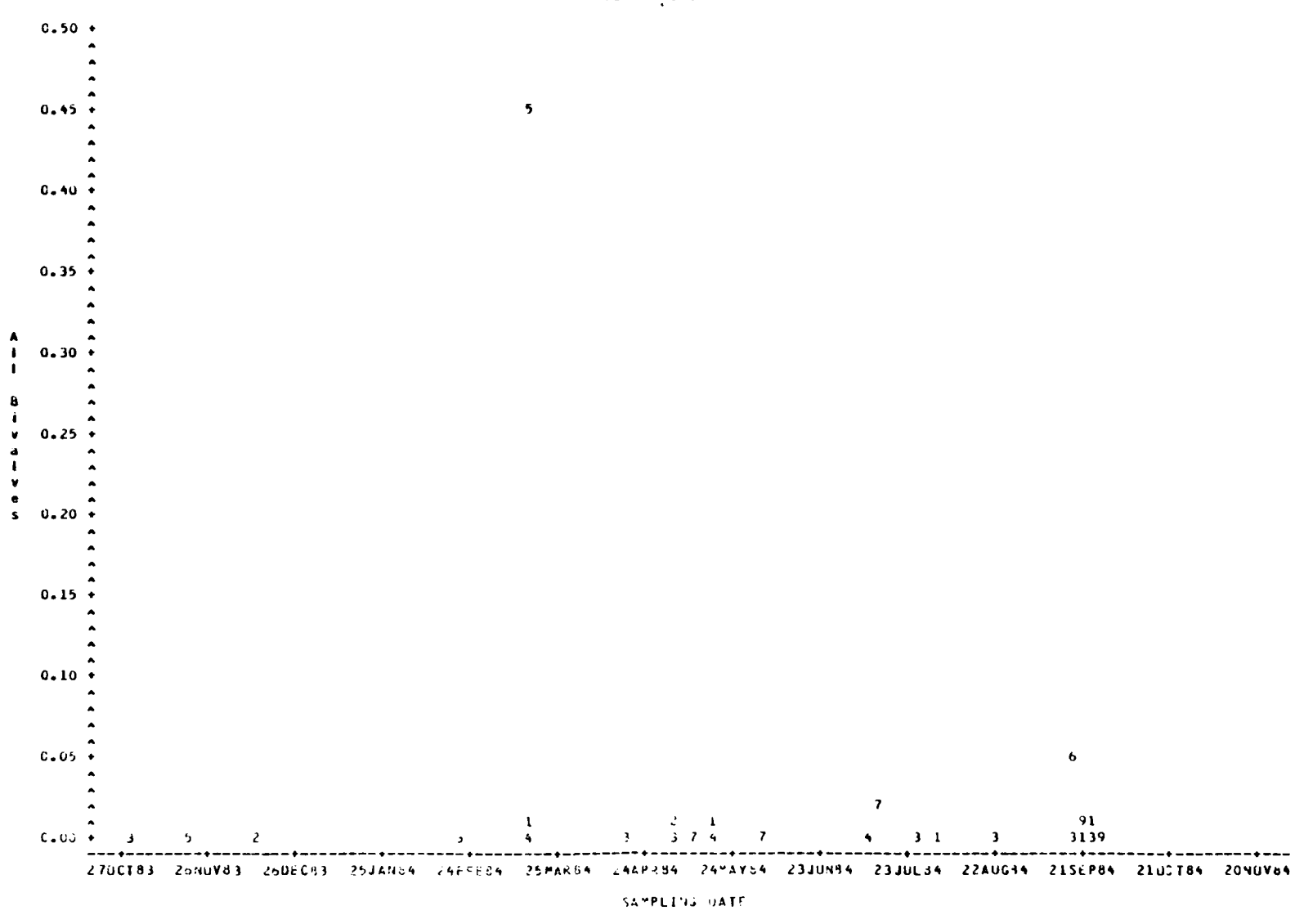
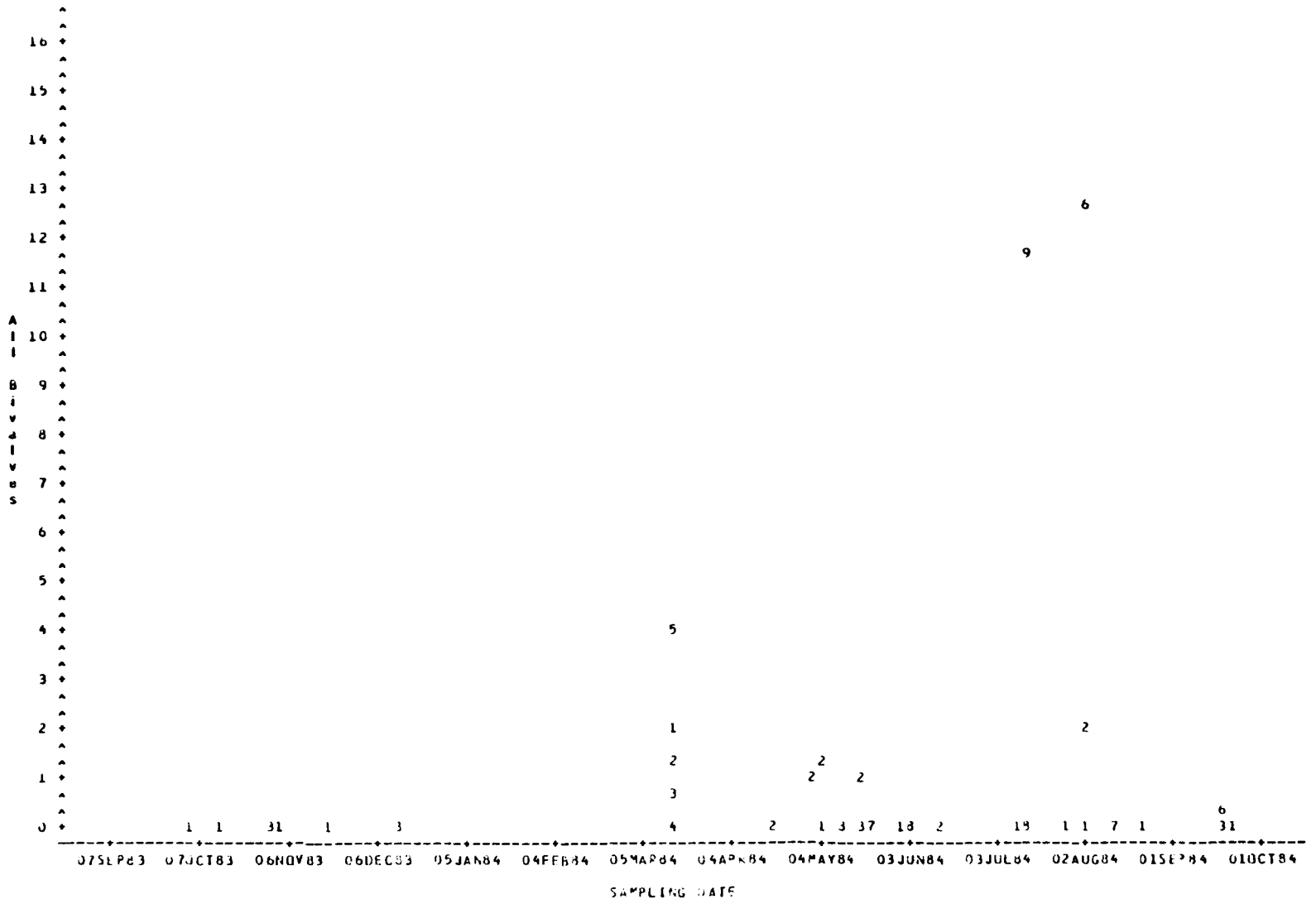

TOW TYPE=3
Neosysis americana
20
18
16
14
12
10
8
6
4
2
0
SAMPLING DATE
07SEP83
07OCT83
06NOV83
06DEC83
05JAN84
04FEB84
04MAR84
04APR84
04MAY84
03JUN84
03JUL84
02AUG84
01SEP84
01OCT84
NOTE: 93 DES HIDDEN

Figure A29.



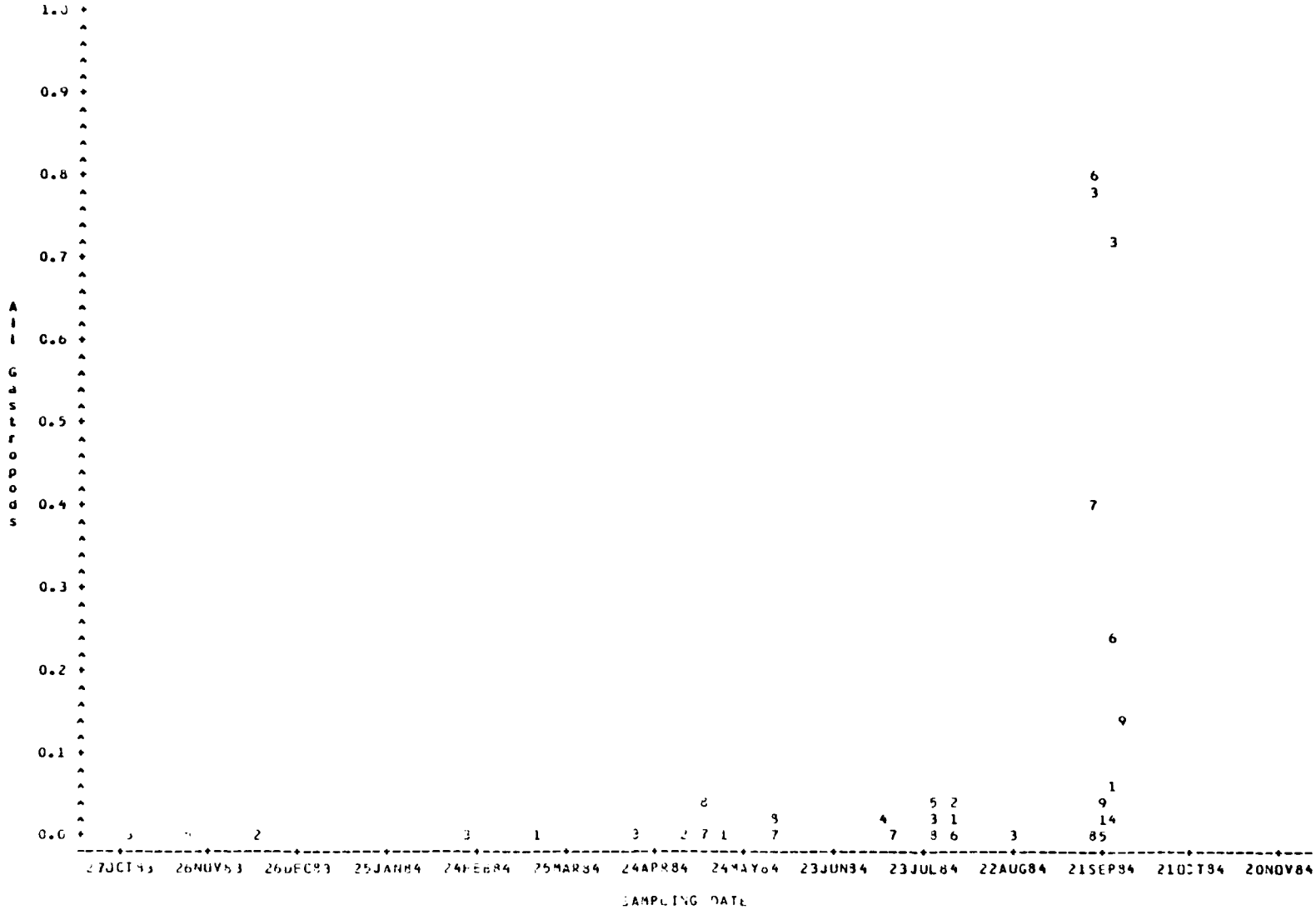
NOTE: 16 OBS HIDDEN

Figure A30.



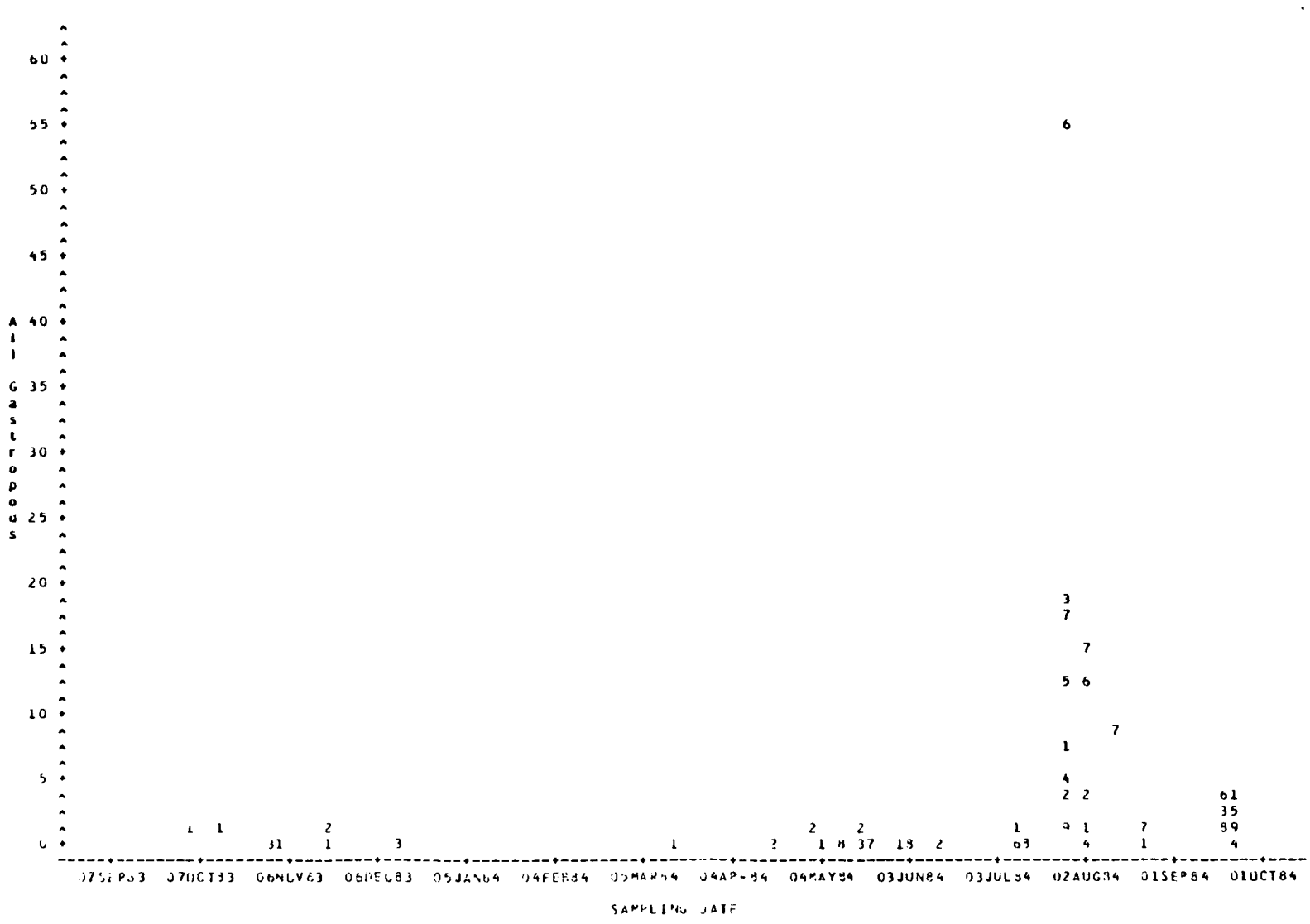
NOTE: 46 OBS HIDDEN

Figure A31.



NOTE: 9 OBS HIDDEN

Figure A32.



NOTE: 36 OBS HIDDEN

Figure A33.

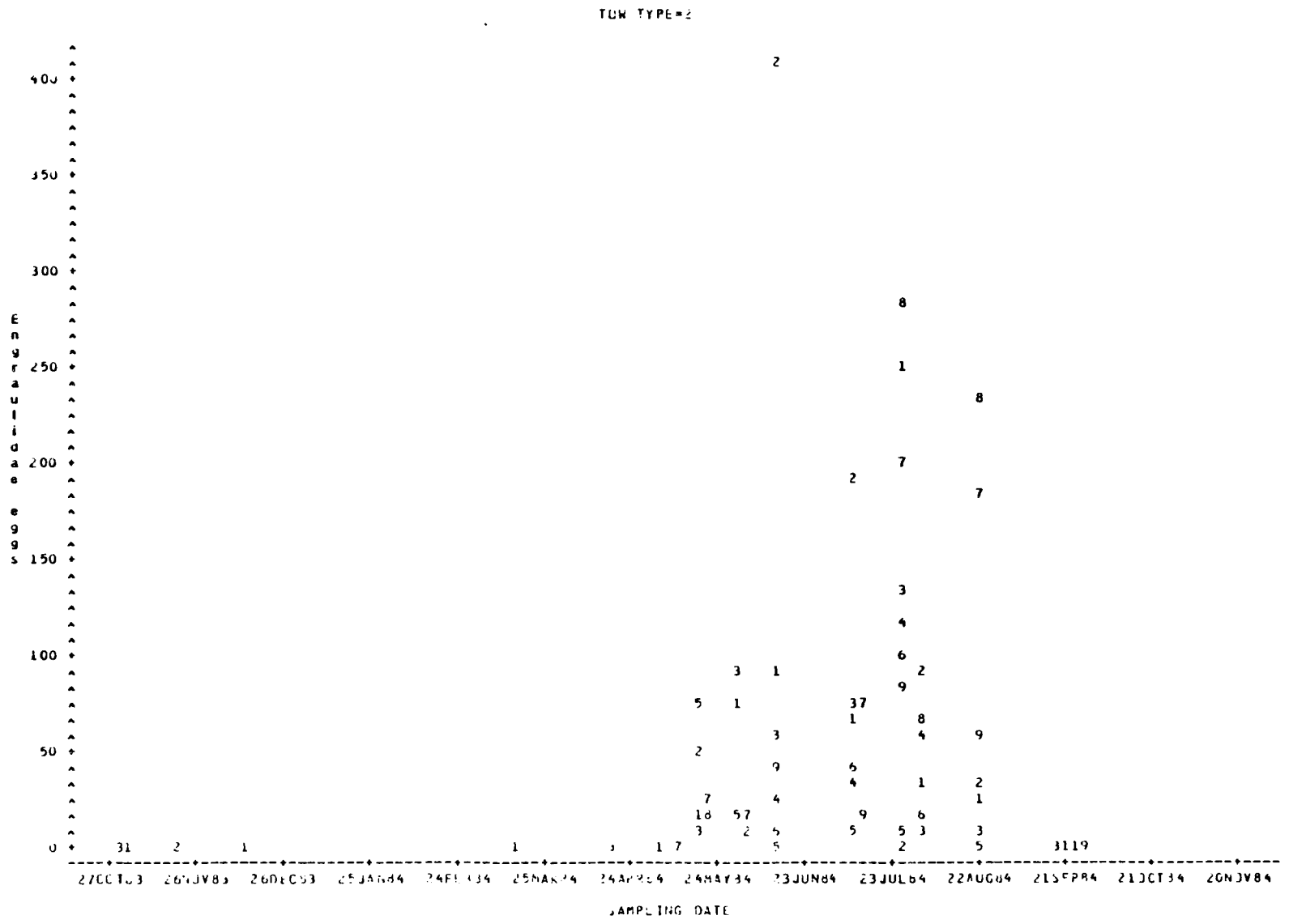
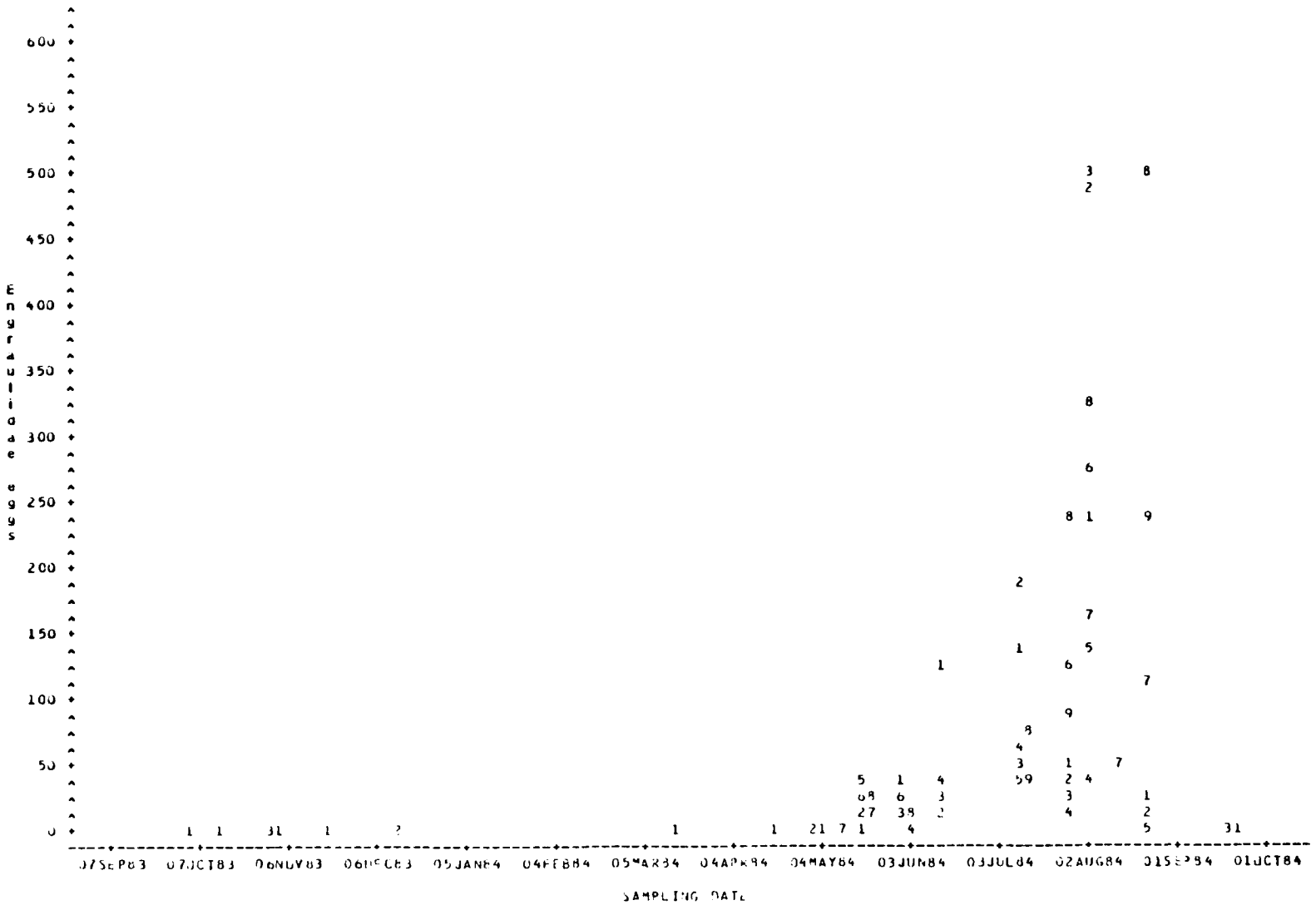

TOW TYPE=2
Eggs per 10 minute tow
400
350
300
250
200
150
100
50
0
SAMPLING DATE
NOTE:

Figure A34.



NOTE: 42 OBS HIDDEN

Figure A35.

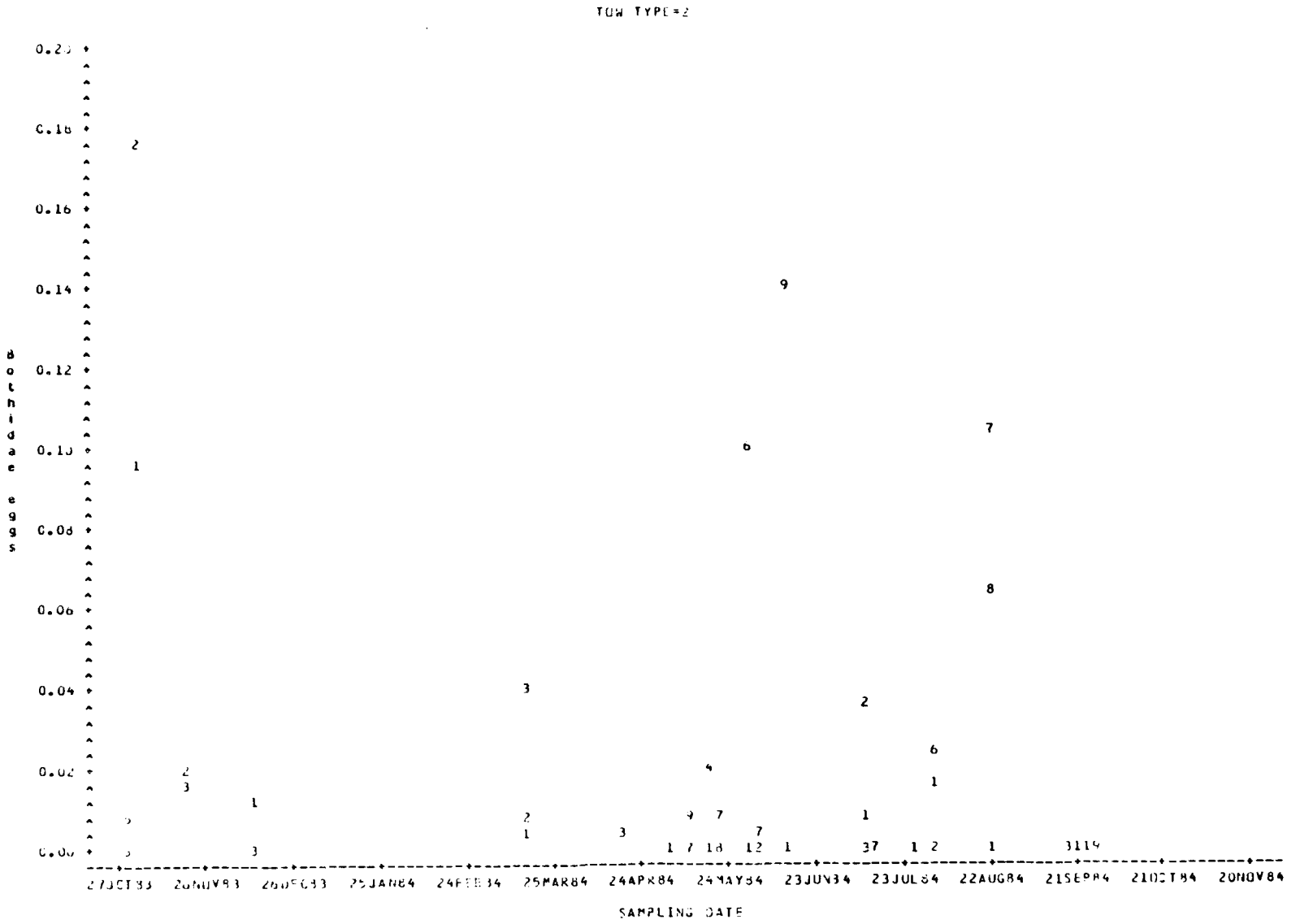
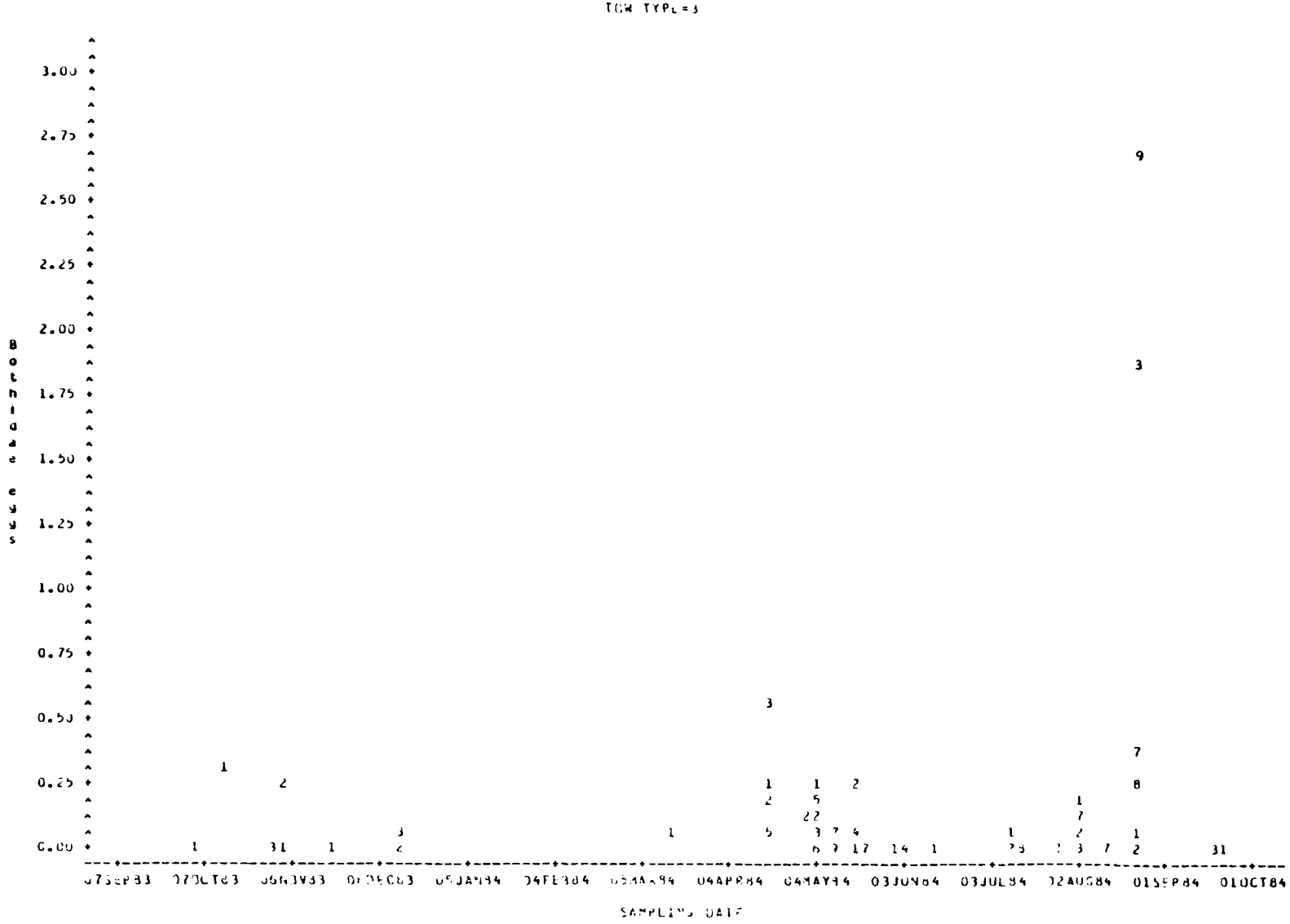
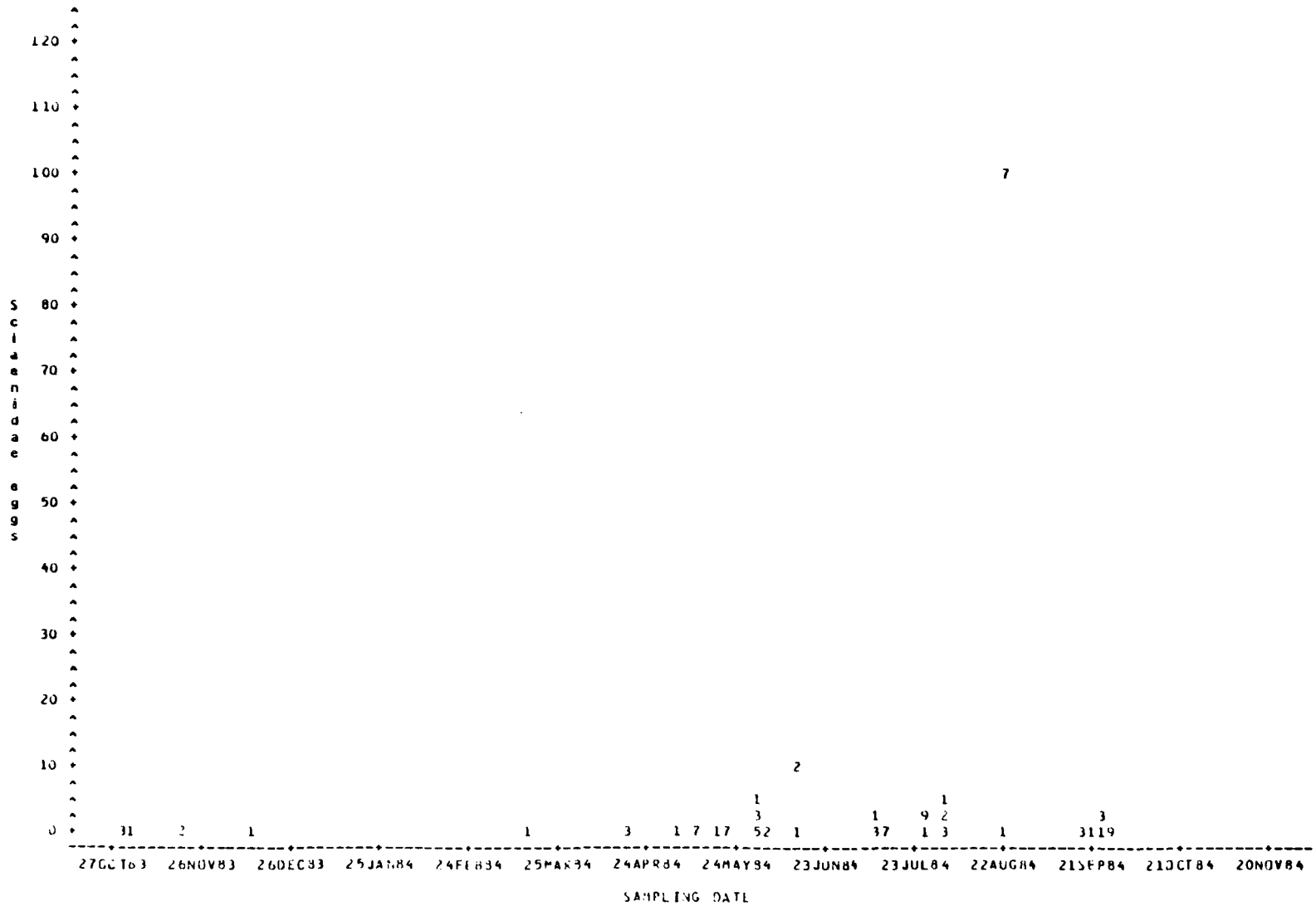

TOW TYPE=2
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
27OCT83
26NOV83
26DEC83
25JAN84
24FEB84
25MAR84
24APR84
24MAY84
23JUN84
23JUL84
22AUG84
21SEP84
21OCT84
20NOV84
SAMPLING DATE

Figure A36.



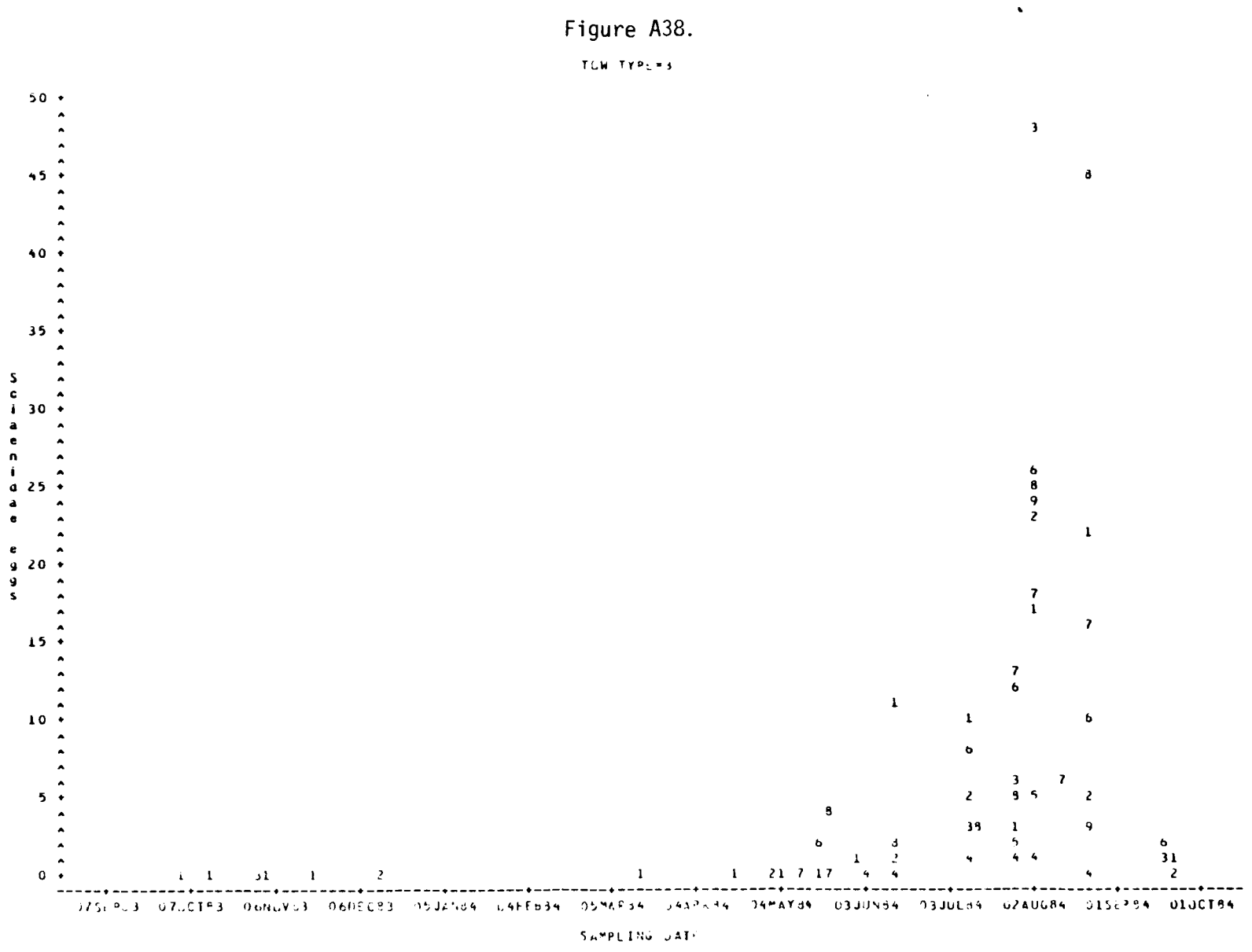
NOTE: 54 OBS HIDDEN

Figure A37.



NOTE: 65 TOWS HIDDEN

Figure A38.



NOTE: 44 OBS HIDDEN

Figure A39.

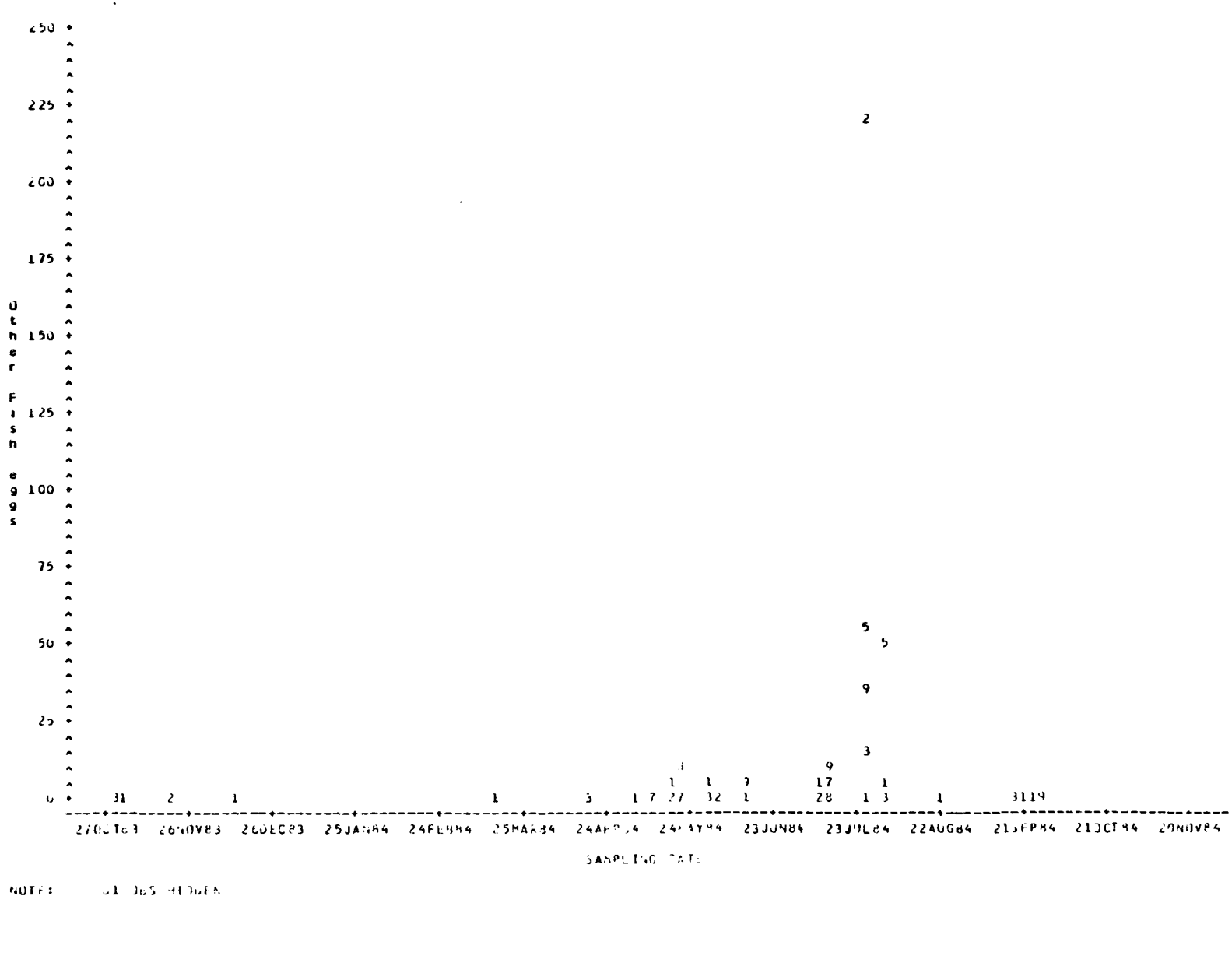
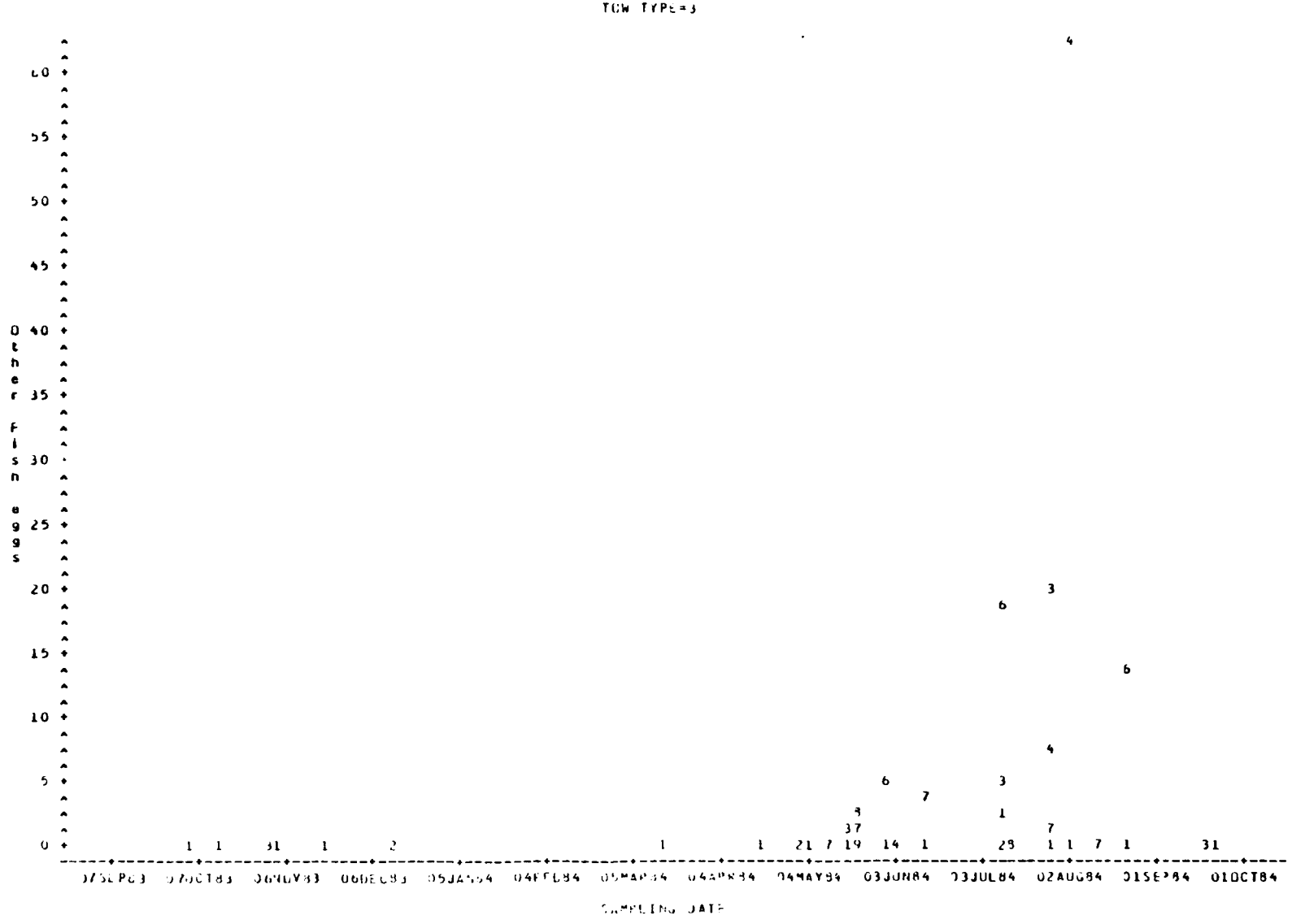

TOW TYPE=2
Other Fish eggs
250
225
200
175
150
125
100
75
50
25
0
31
2
1
1
3
1 7
1 27
1 32
3
1
9
1
9 17 28
2
5
5
9
3
1 1 3
1
3 11 9
27OCT83
26NOV83
26DEC83
25JAN84
24FEB84
25MAR84
24APR84
24MAY84
23JUN84
23JUL84
22AUG84
21SEP84
21OCT84
20NOV84
SAMPLING DATE
NOTE: 31 JOS REDUCED

Figure A40.



NOTE: 62 OBS HIDDEN

Figure A41.

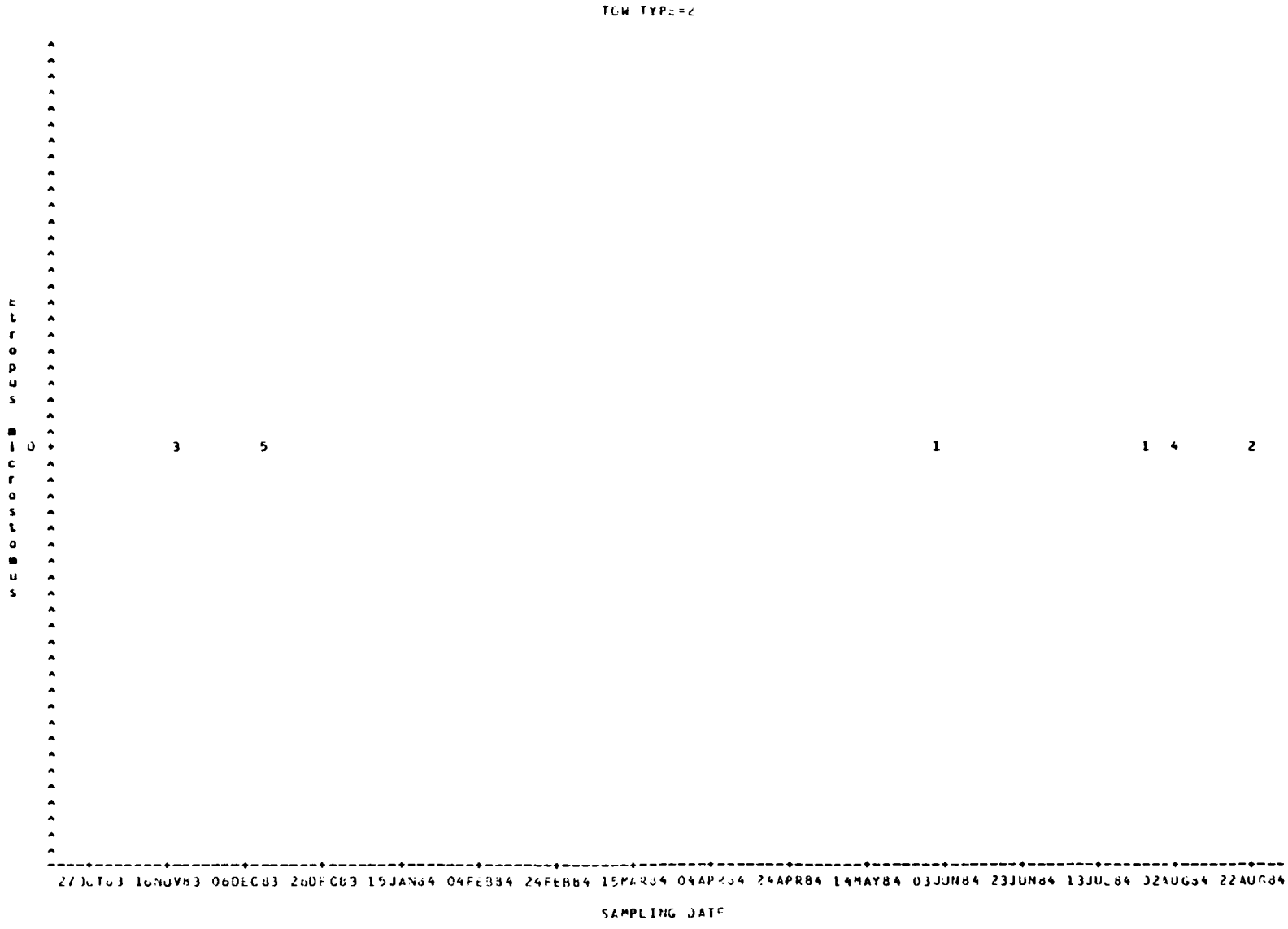
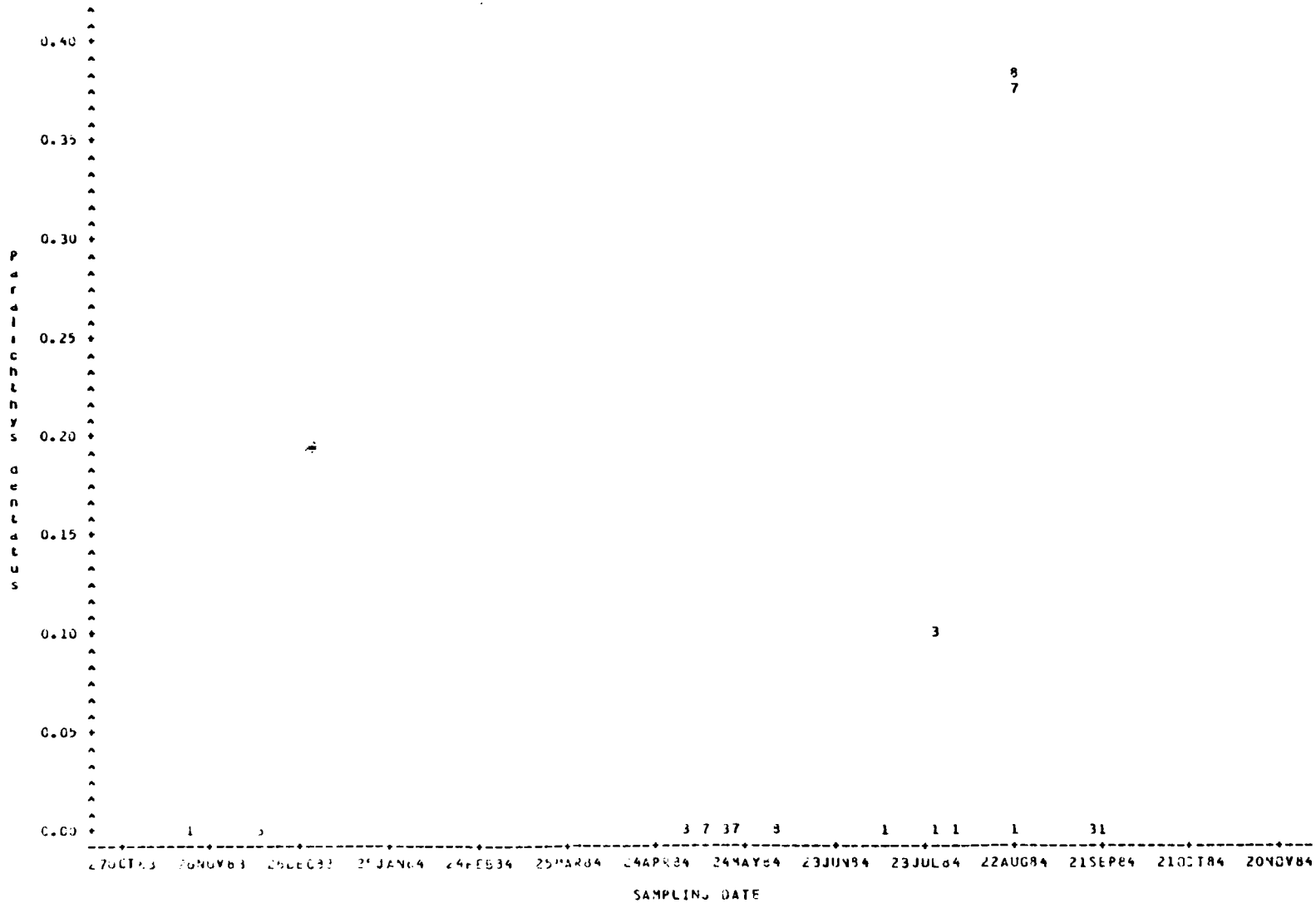

TCM TYPE=2
SUBPOPULATION SIZE
0
3
5
1
1
4
2
27OCT83
16NOV83
06DEC83
26DEC83
15JAN84
04FEB84
24FEB84
15MAR84
04APR84
24APR84
14MAY84
03JUN84
23JUN84
13JUL84
02AUG84
22AUG84
SAMPLING DATE

Figure A42.



NOTE: [illegible]

Figure A43.

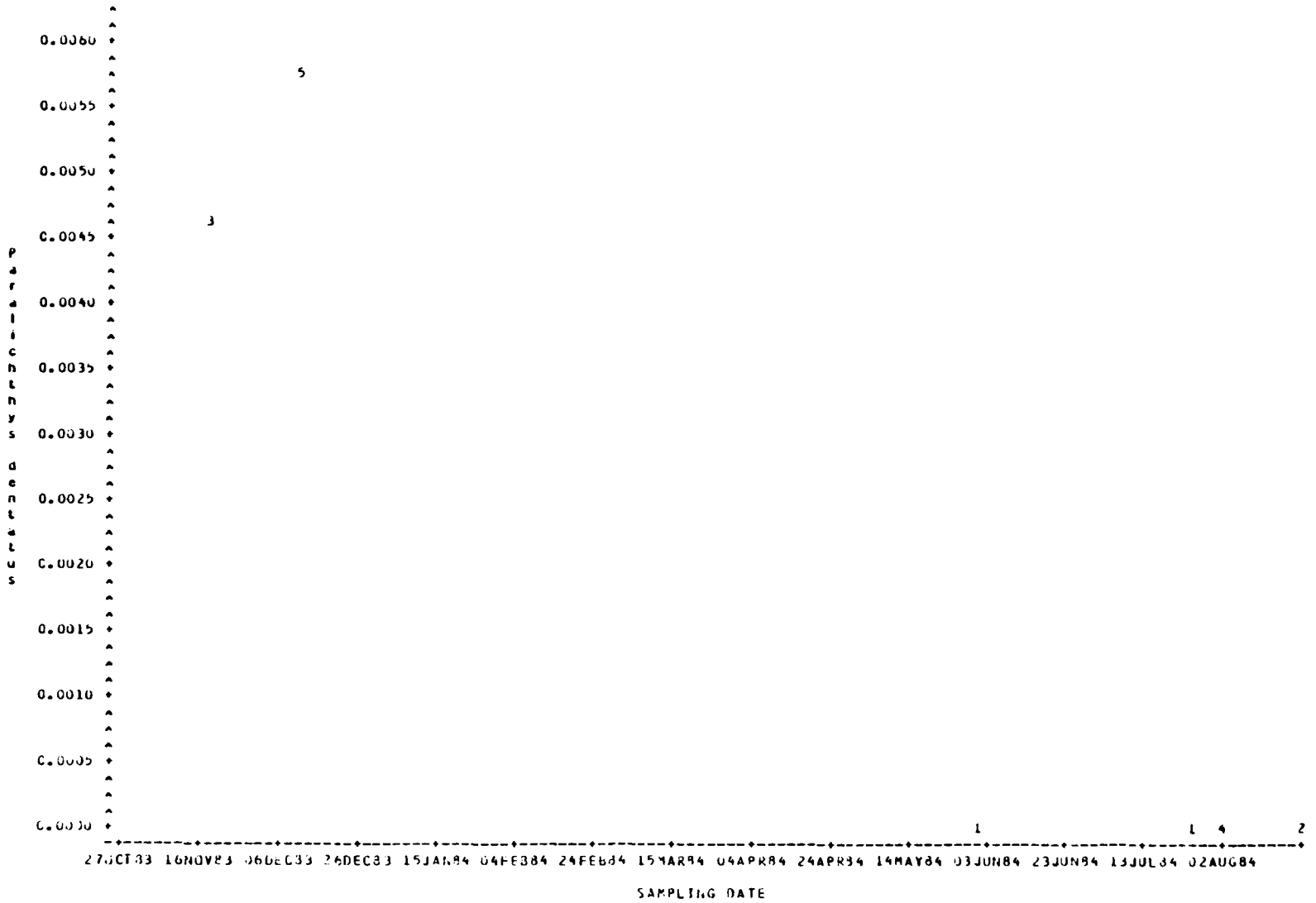
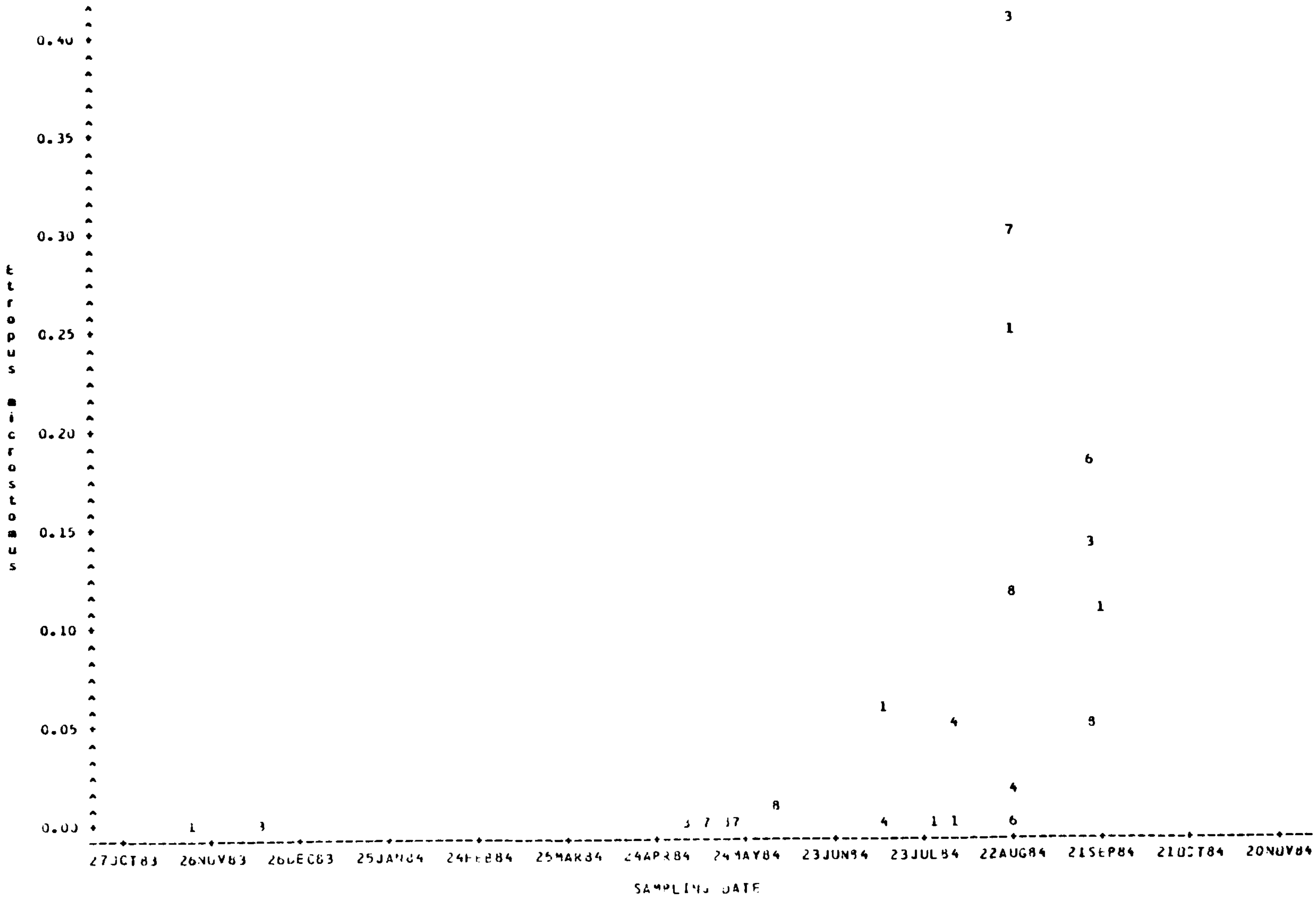

TOW TYPE=2
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
Pteridophyte density
5
3
1
1
4
2
27OCT83
16NOV83
06DEC83
26DEC83
15JAN84
04FEB84
24FEB84
15MAR84
04APR84
24APR84
14MAY84
03JUN84
23JUN84
13JUL84
02AUG84
SAMPLING DATE

Figure A44.

TOW TYPE=3



NOTE: 16 OBS HIDDEN

Figure A45.

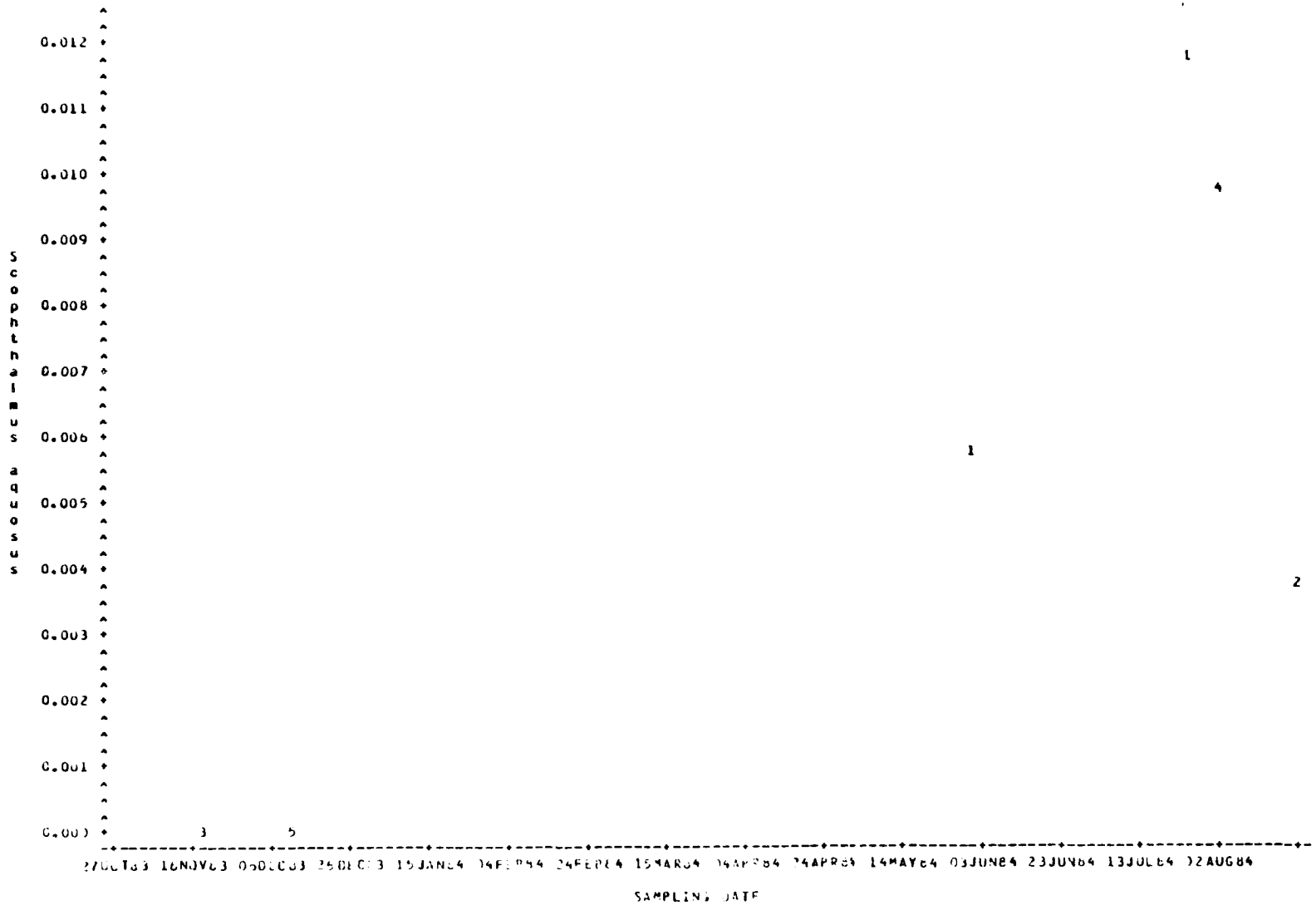

FLOW TYPE=2
0.012
0.011
0.010
0.009
0.008
0.007
0.006
0.005
0.004
0.003
0.002
0.001
0.000
Scophthalmus aquosus
1
2
3
4
5
16NOV83
15JAN84
14MAY84
03JUN84
23JUN84
13JUL84
02AUG84
SAMPLING DATE

Figure A46.

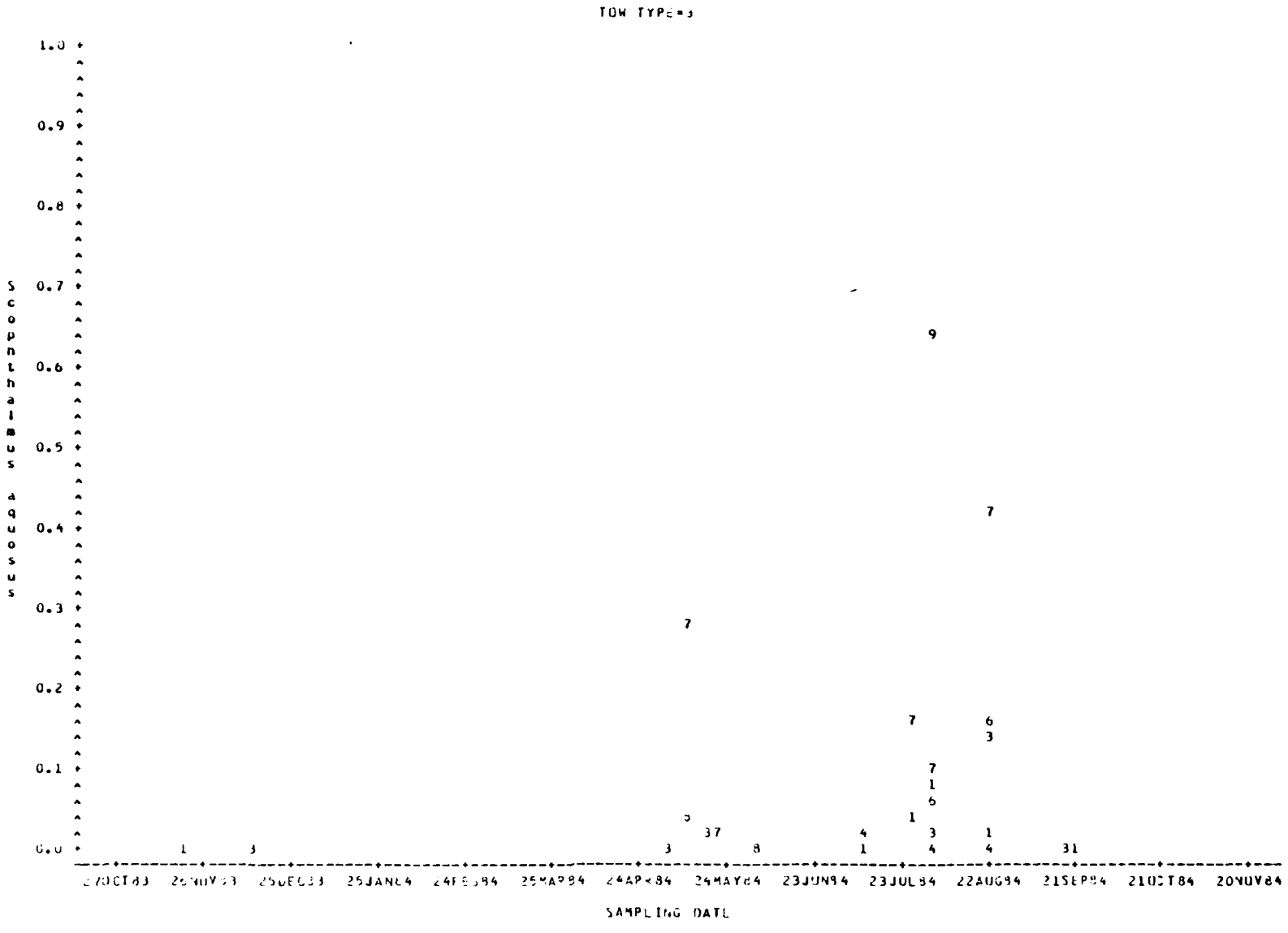
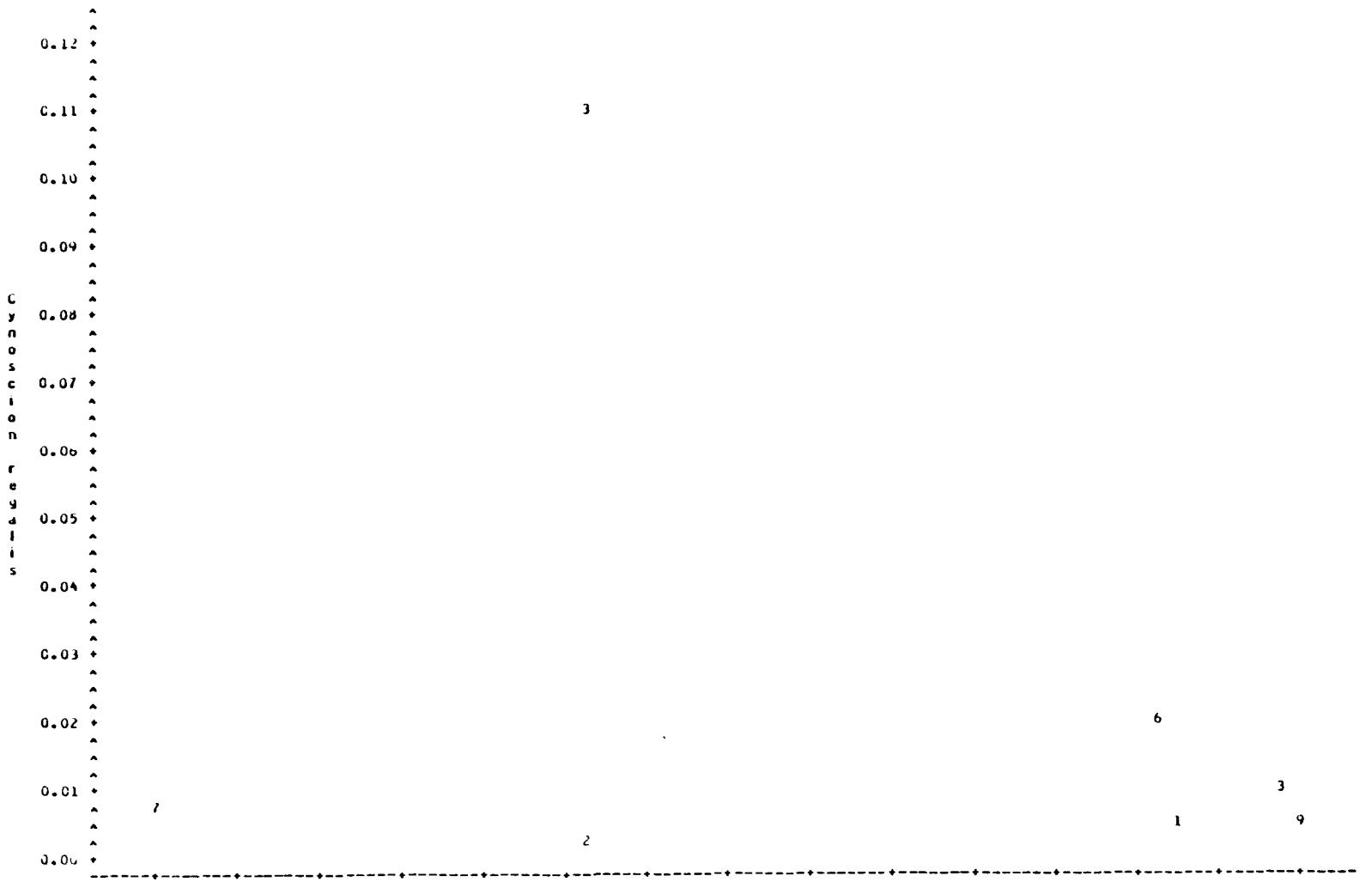

TOW TYPE=3
Scopulas sucus
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
27OCT83
25NOV83
25DEC83
25JAN84
24FEB84
25MAR84
24APR84
24MAY84
23JUN84
23JUL84
22AUG84
21SEP84
21OCT84
20NOV84
SAMPLING DATE

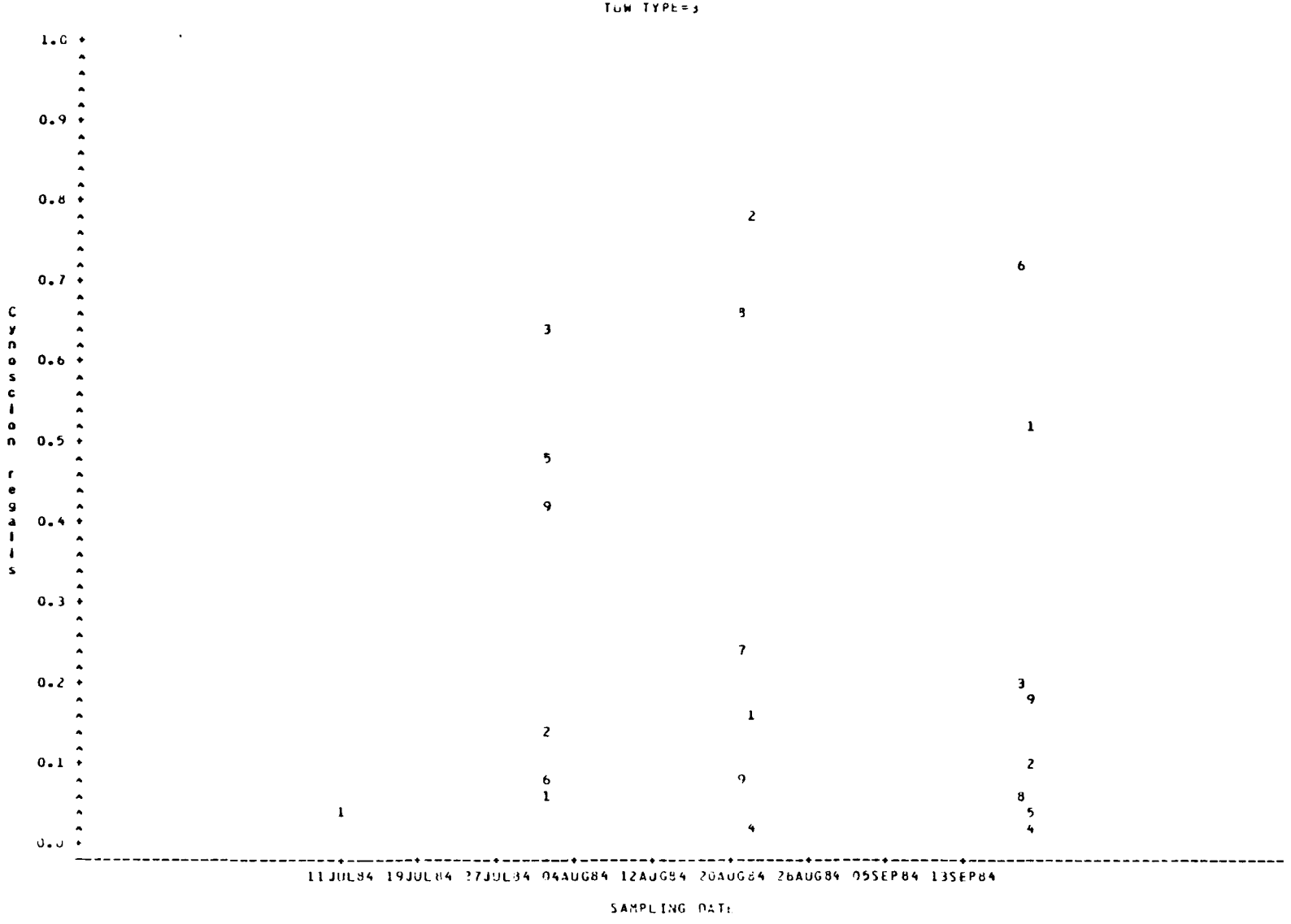
Figure A47.

TOW TYPE=2



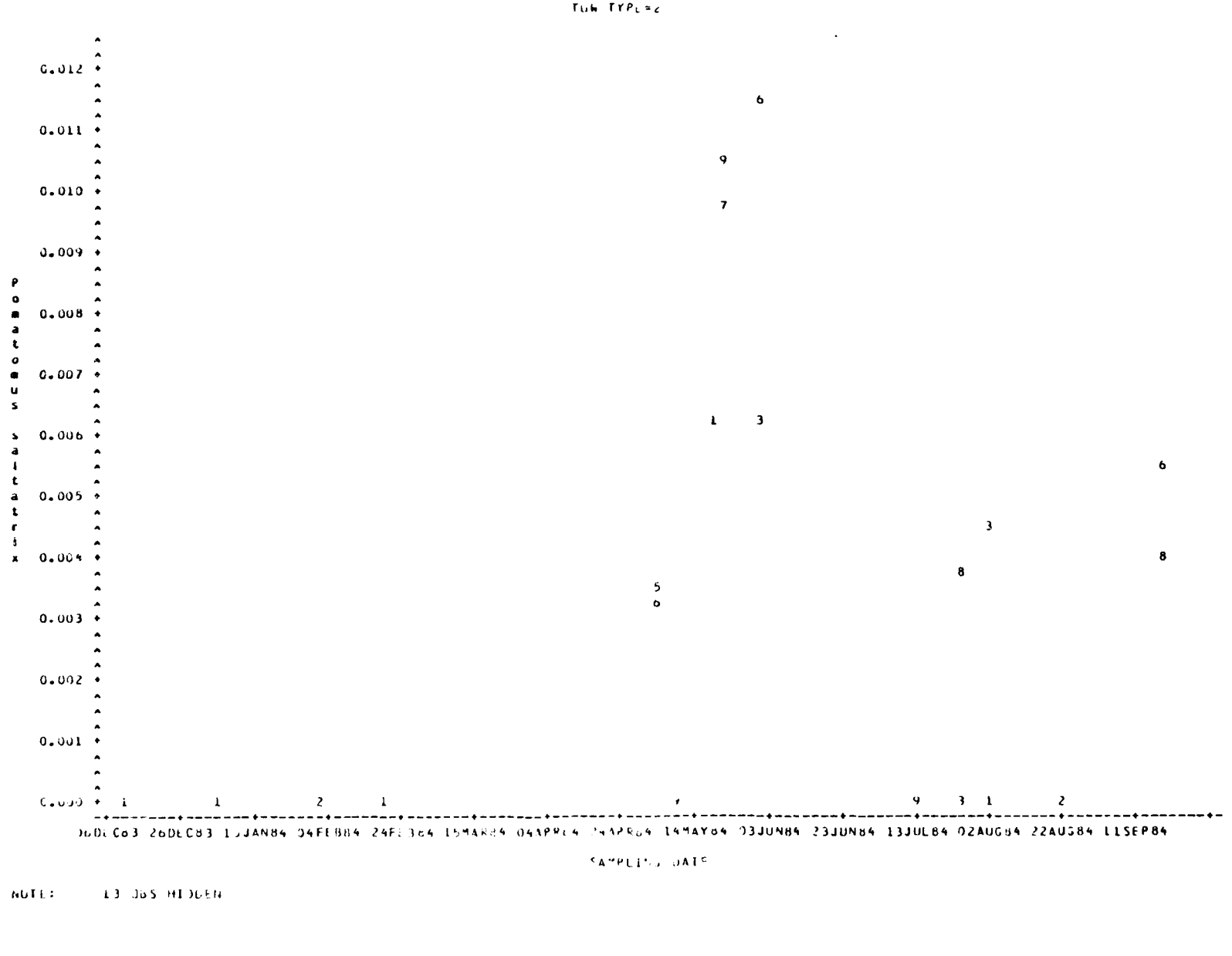
NOTE: 1 OBS HIDDEN

Figure A48.



NOTE: 2 OBS HIDDEN

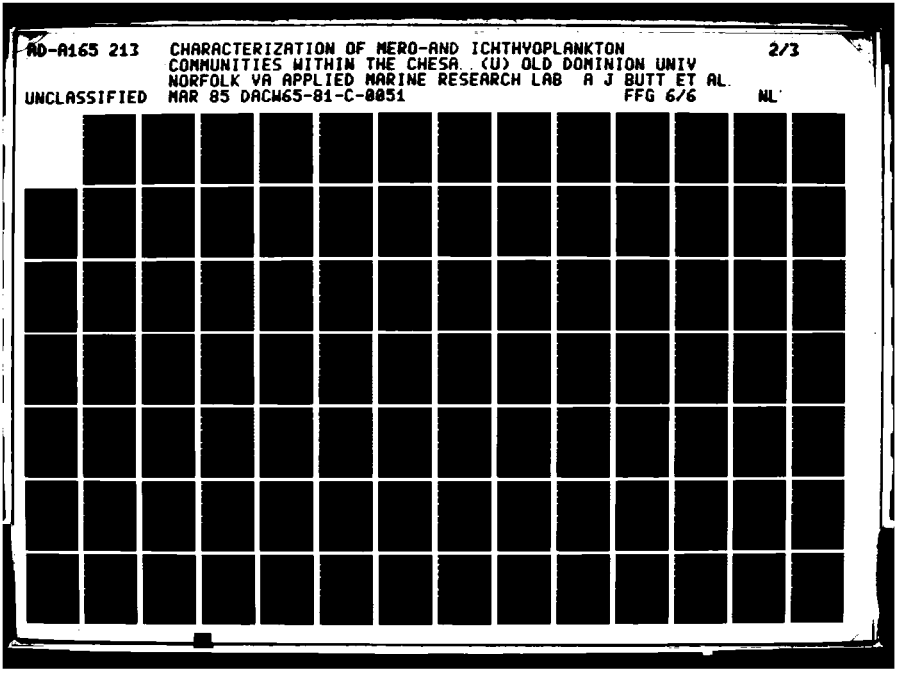
Figure A49.



NOTE: 13 JOS HIDDEN

AD-A165 213 CHARACTERIZATION OF MERO-AND ICHTHYOPLANKTON COMMUNITIES WITHIN THE CHESA.. (U) OLD DOMINION UNIV NORFOLK VA APPLIED MARINE RESEARCH LAB A J BUTT ET AL. 2/3

UNCLASSIFIED MAR 85 DACW65-81-C-0051 FFG 6/6 NL



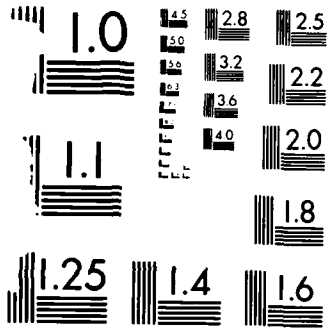
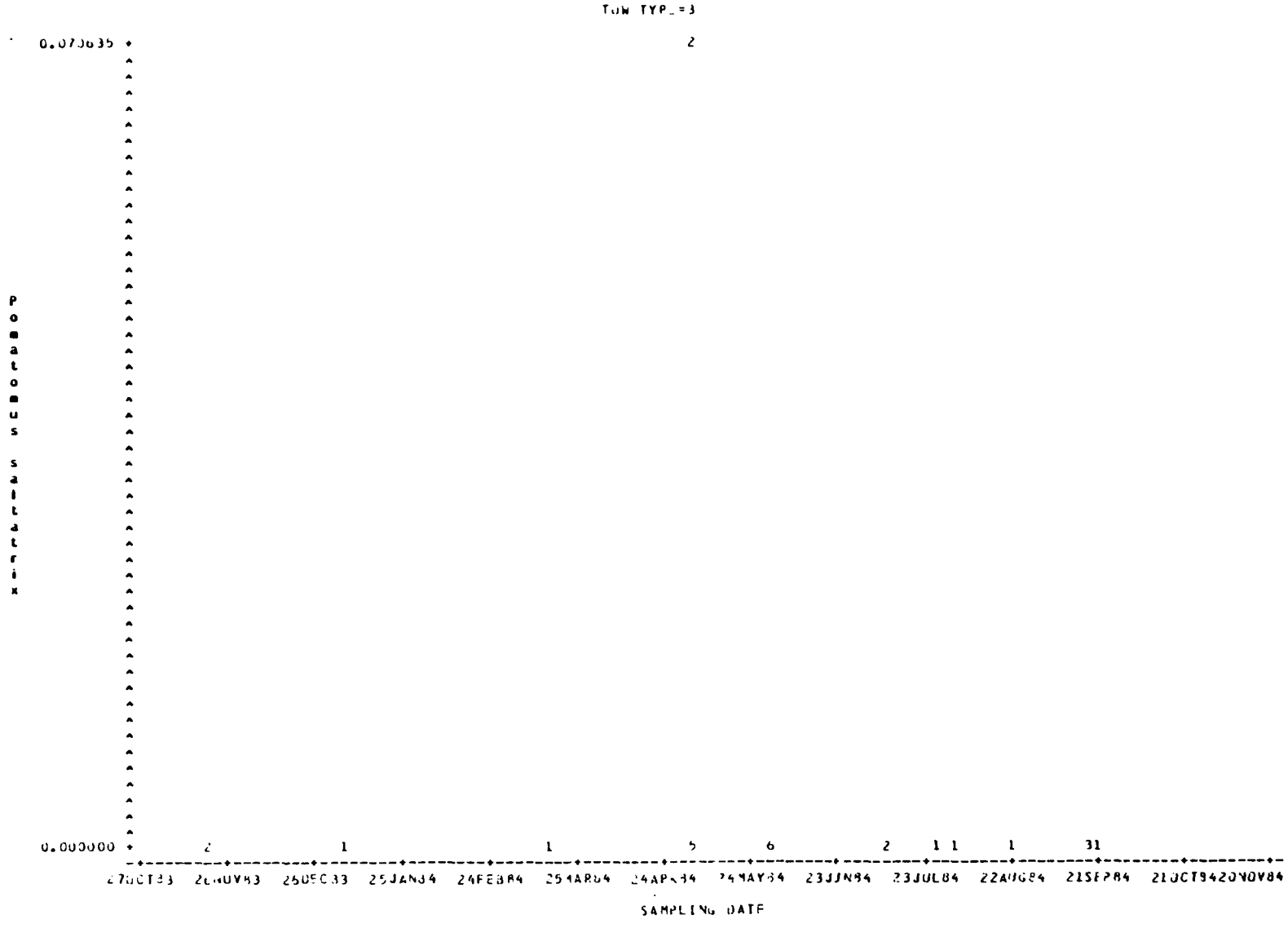


Figure A50.



NOTE: 27 OBS HIDDEN

Figure A51.

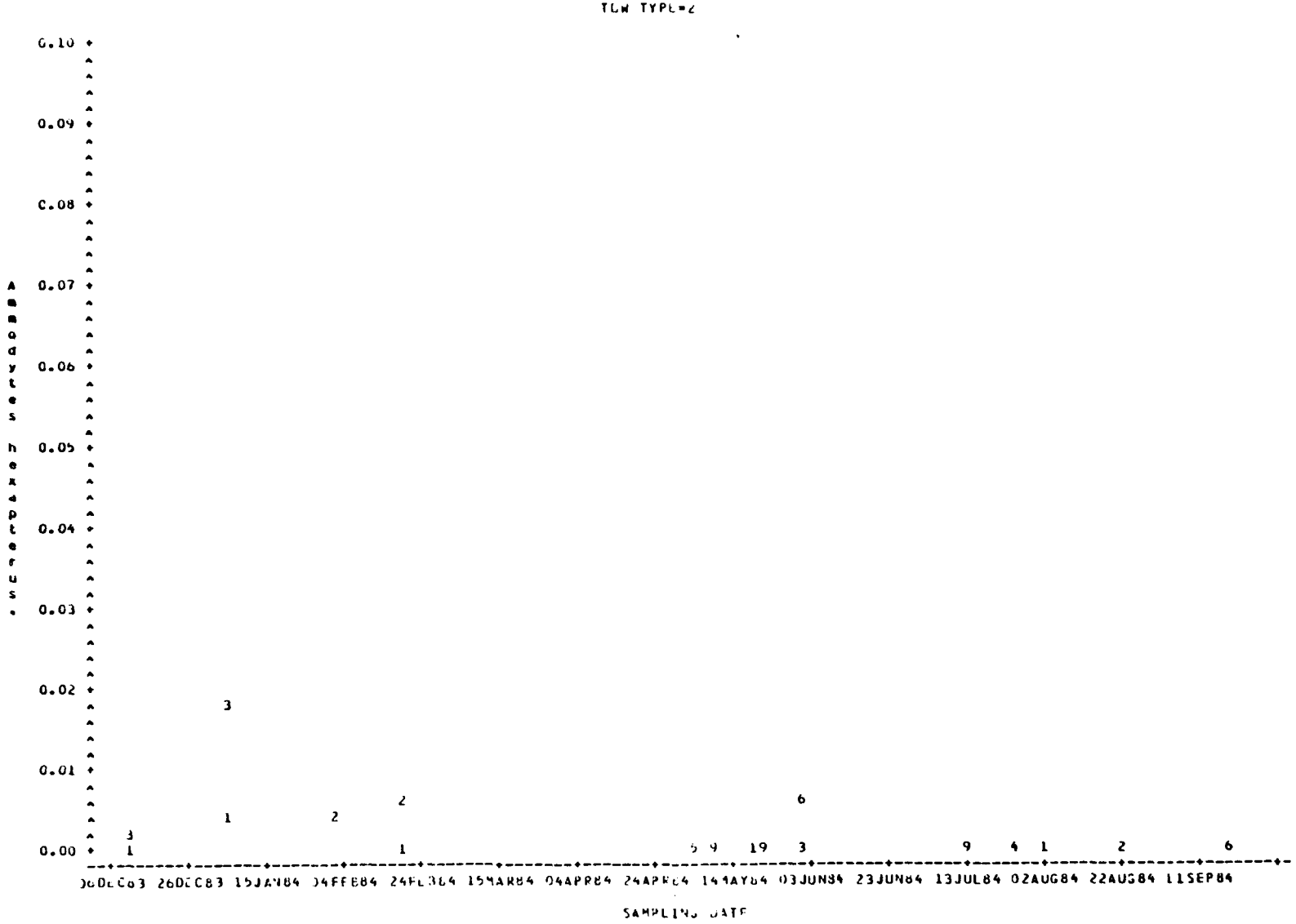
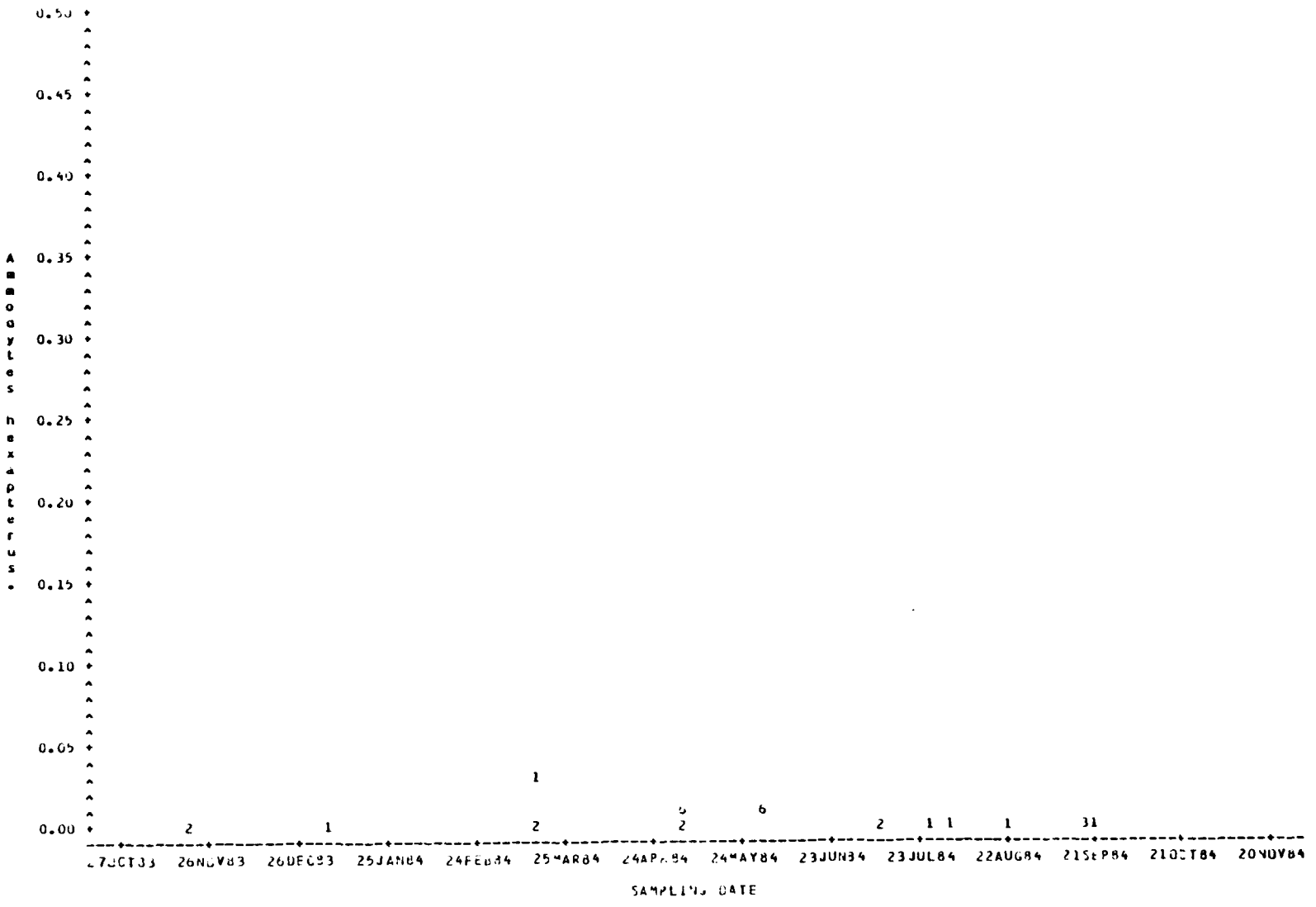
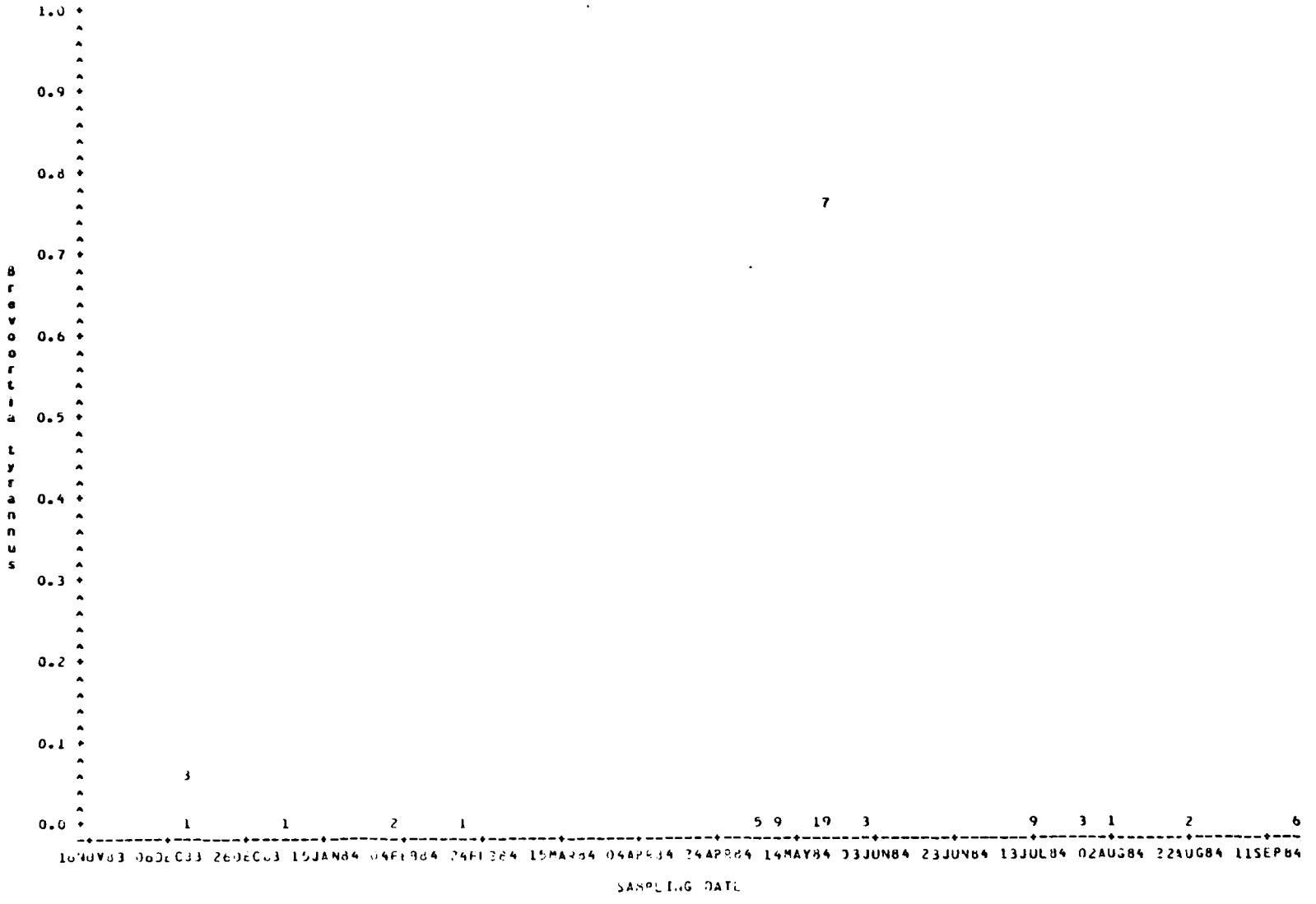

TCW TYPE=2
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
Aldehydes, hexanals
3
1
1
3
2
1
2
1
6
5 9 19 3
9 4 1 2 6
26DEC83 15JAN84 04FEB84 24FEB84 15MAR84 04APR84 24APR84 14MAY84 03JUN84 23JUN84 13JUL84 02AUG84 22AUG84 11SEP84
SAMPLING DATE
NOTE: 13 OBS HIDDEN

Figure A52.



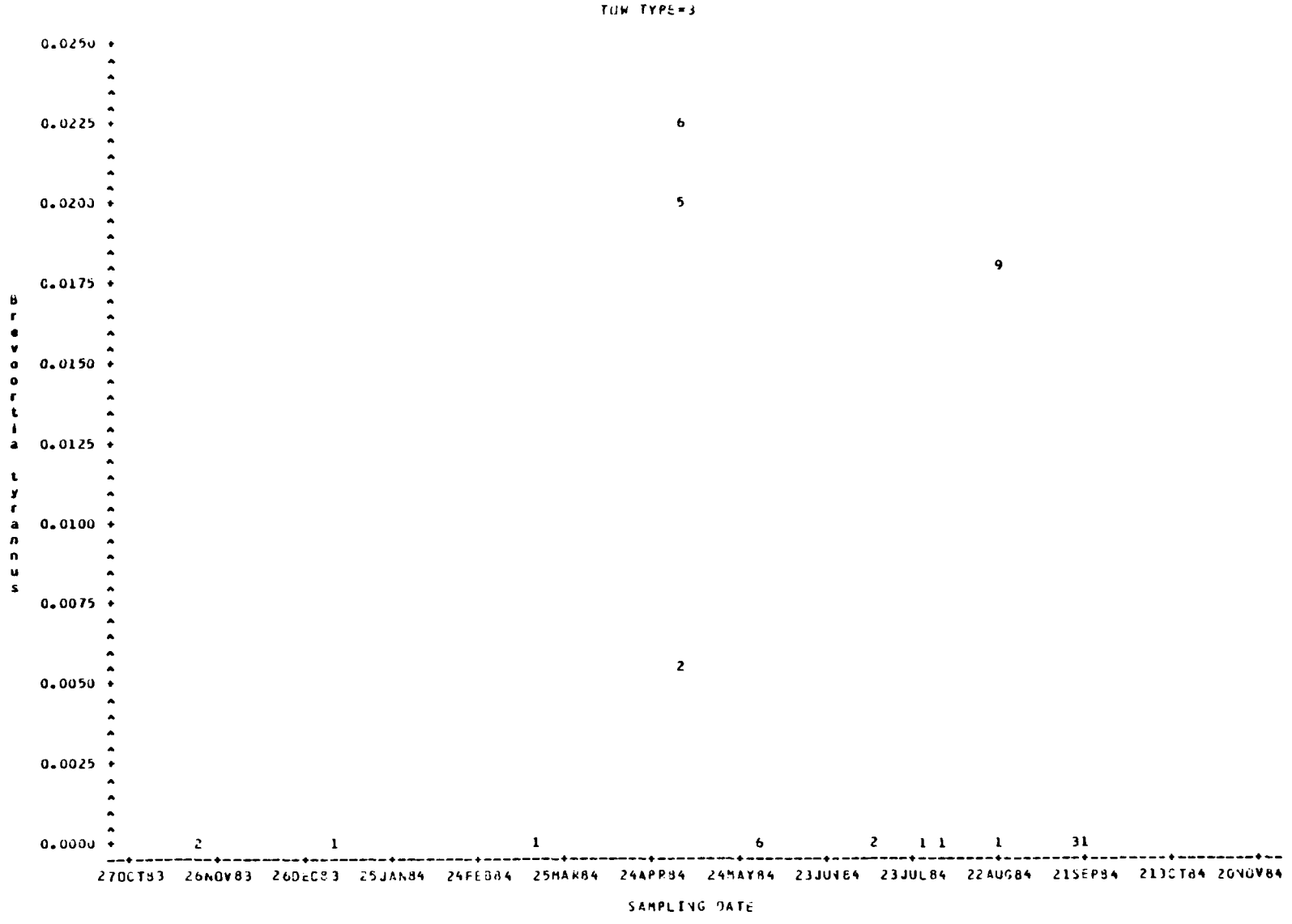
NOTE: 21 OBS HIDDEN

Figure A53.



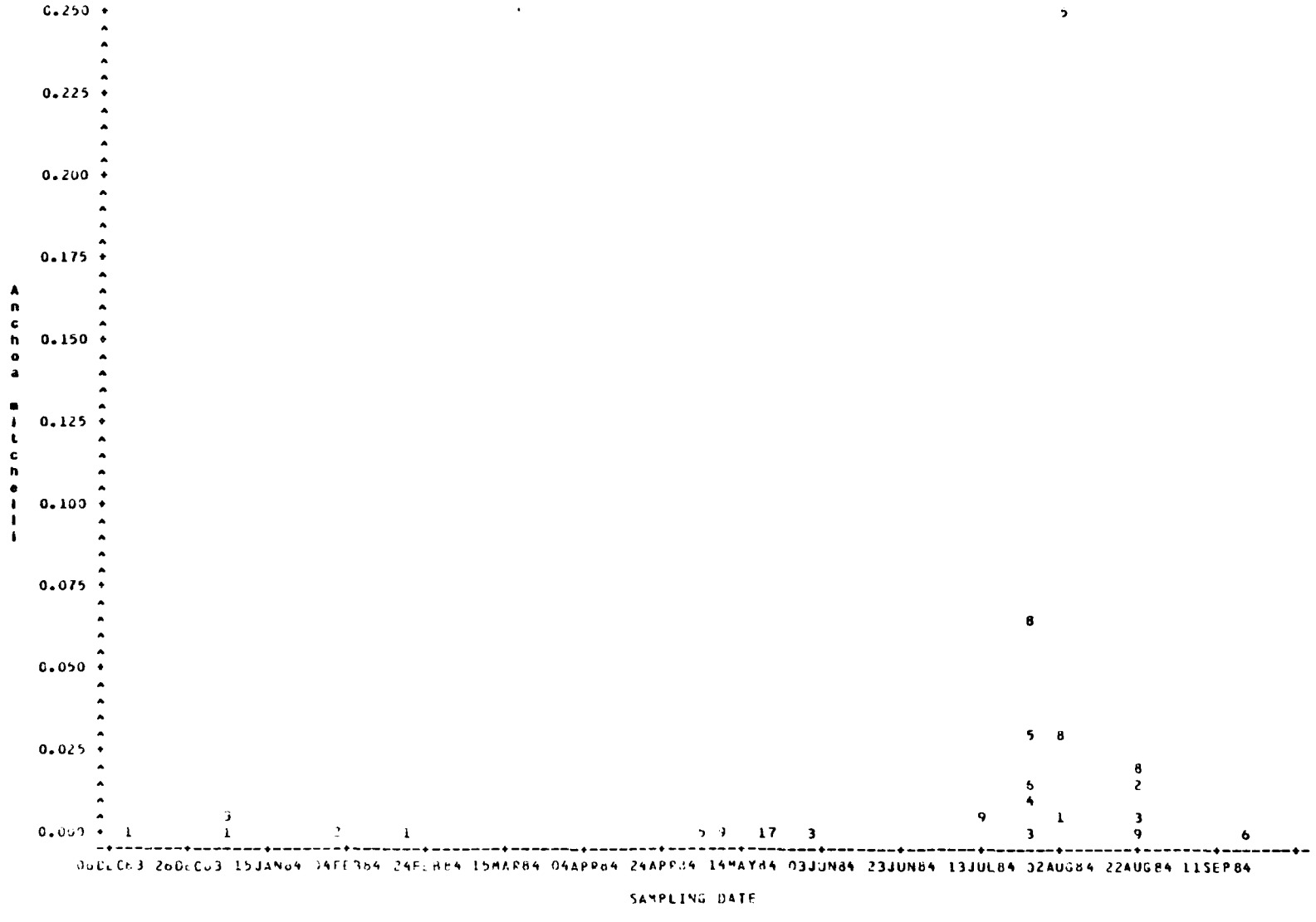
NOTE: 17 GOS HIDDEN

Figure A54.



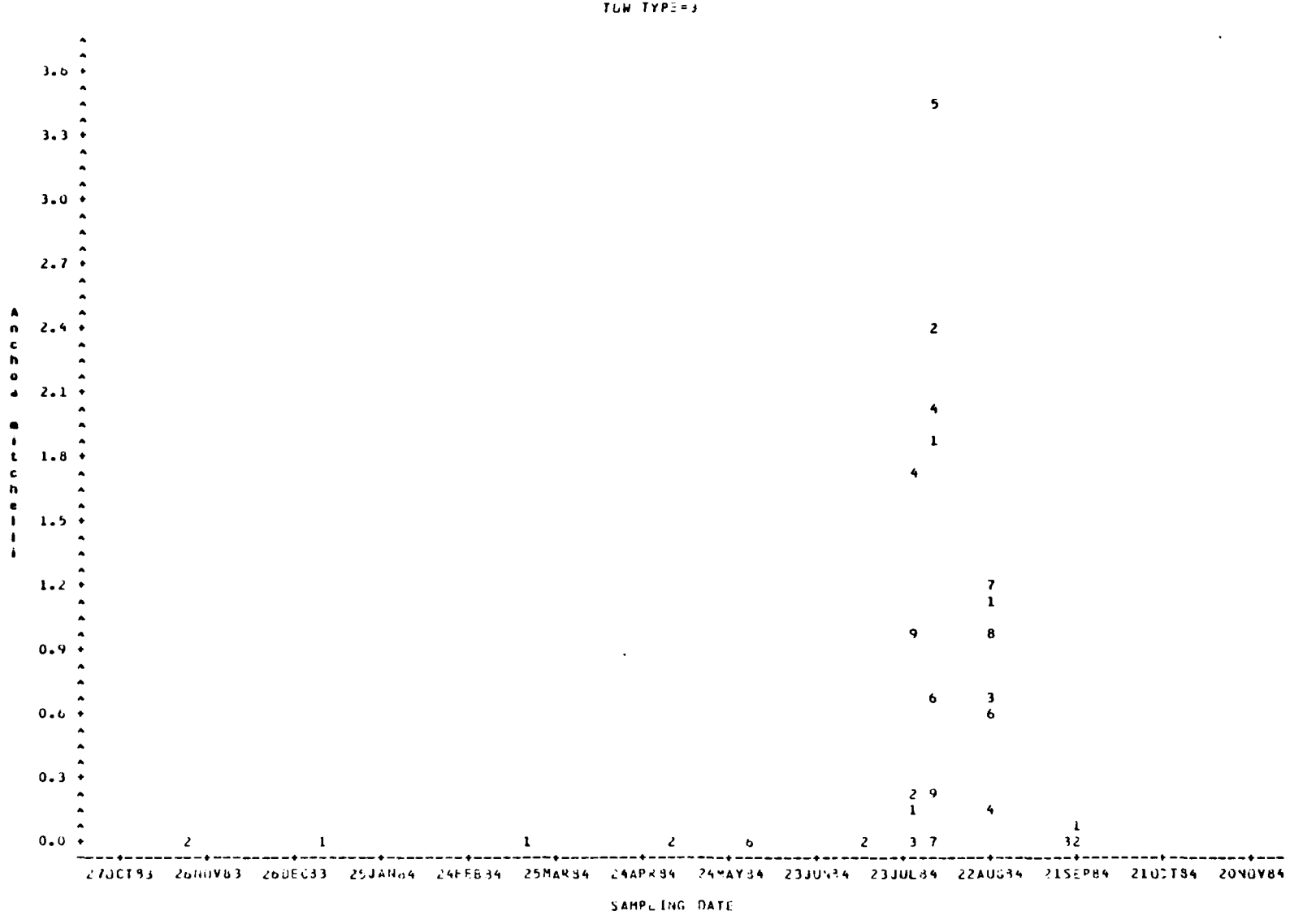
NOTE: 25 OBS HIDDEN

Figure A55.



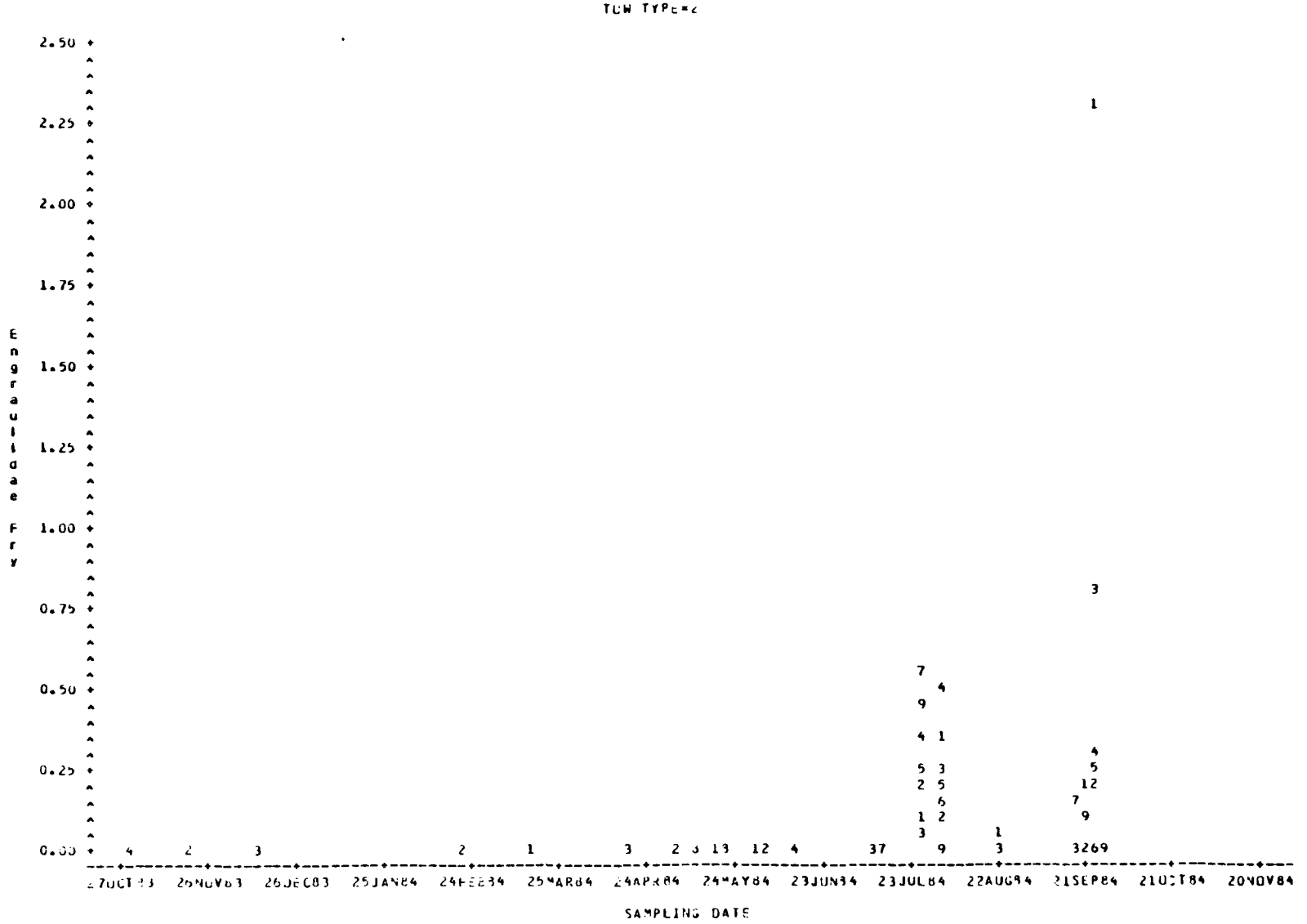
NOTE: 9 DAYS MIDDLE

Figure A56.



NOTE: 12 TOWS HIDDEN

Figure A57.



NOTE: 36 TOWS MISSED

Figure A58.

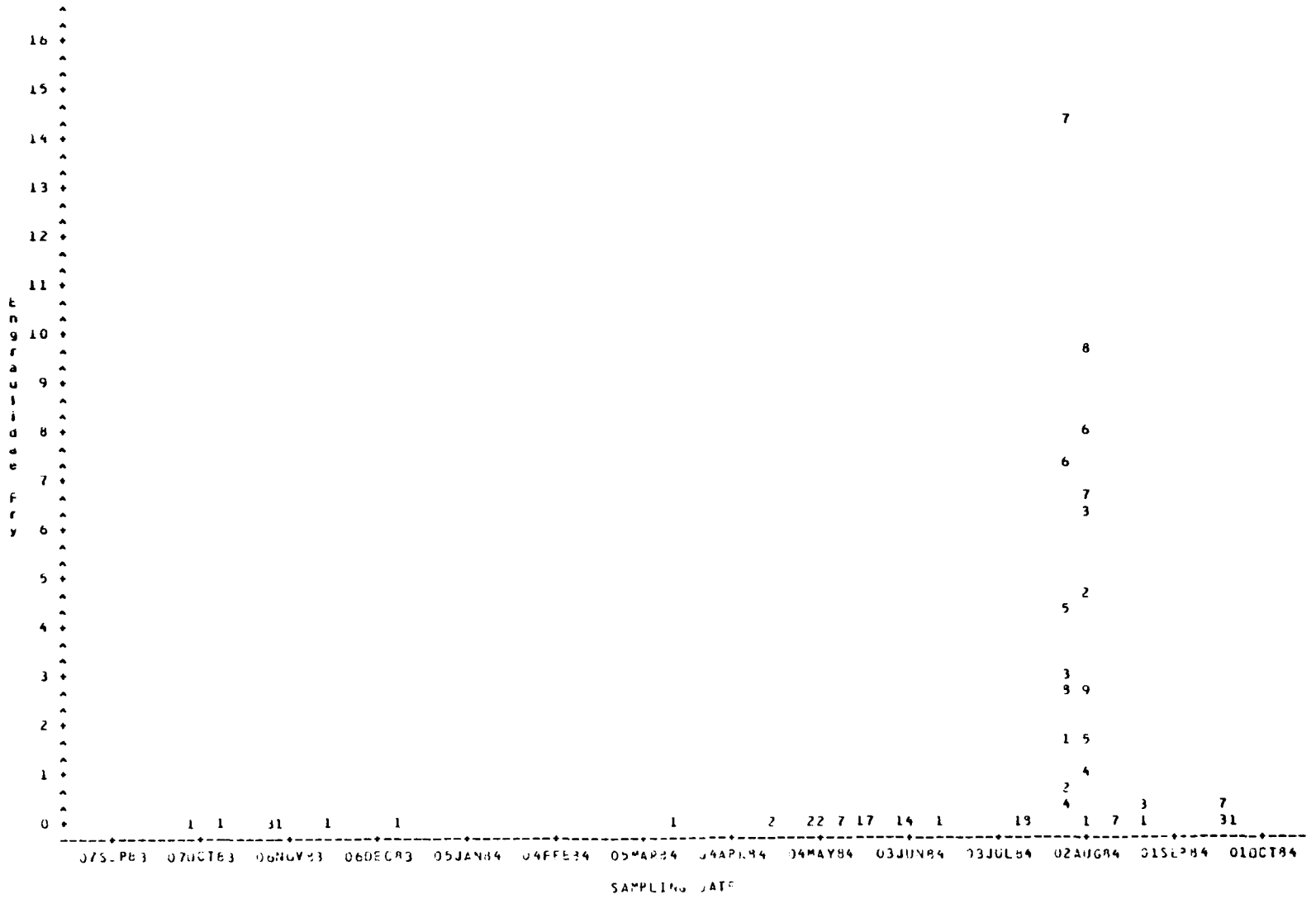

TOW TYPE=3
Fry Abundance
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
SEP83 07OCT83 06NOV83 06DEC83 05JAN84 04FEB84 05MAR84 04APR84 04MAY84 03JUN84 03JUL84 02AUG84 01SEP84 01OCT84
SAMPLING DATE
NOTE: 56 OBS HIDDEN

Figure A59.

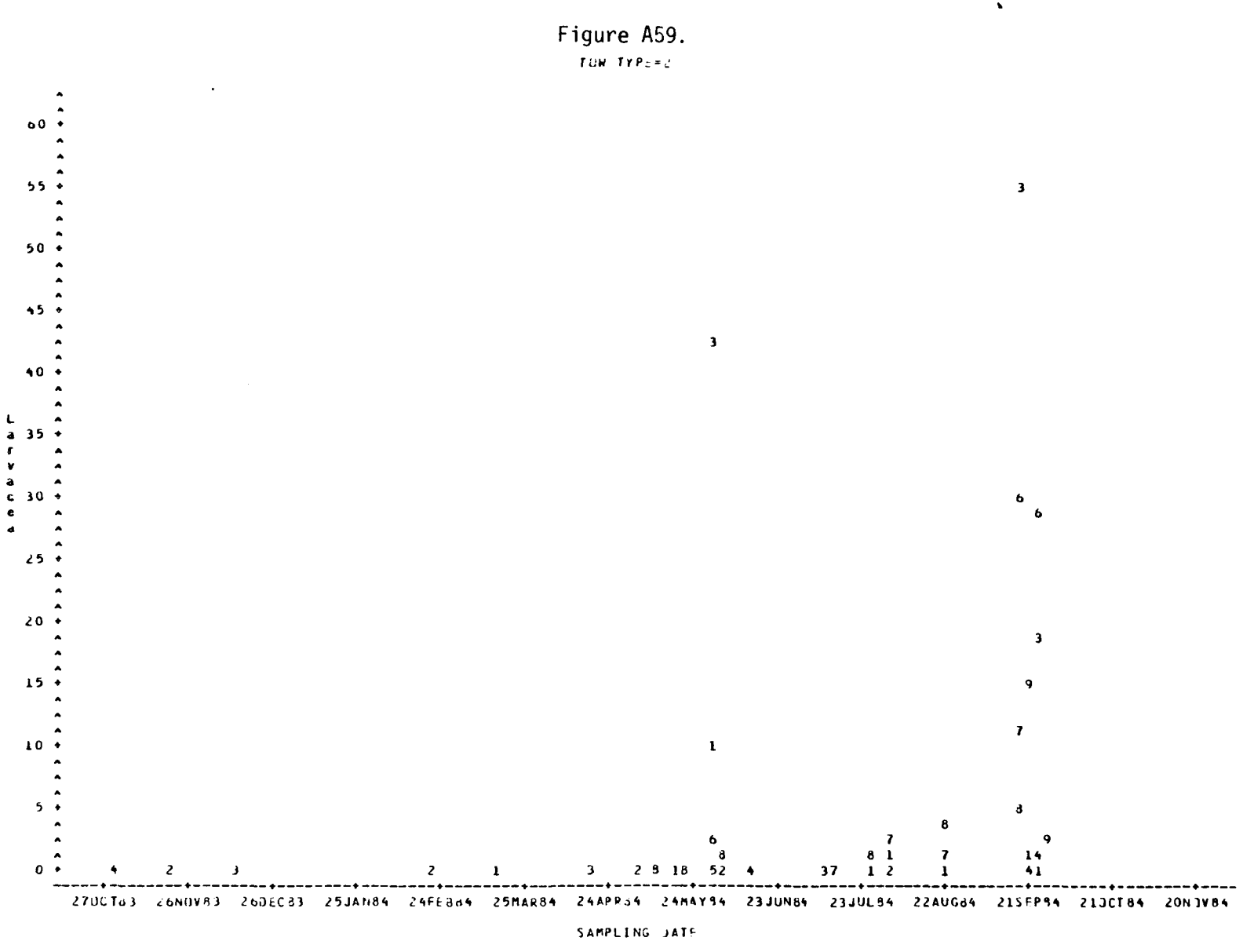
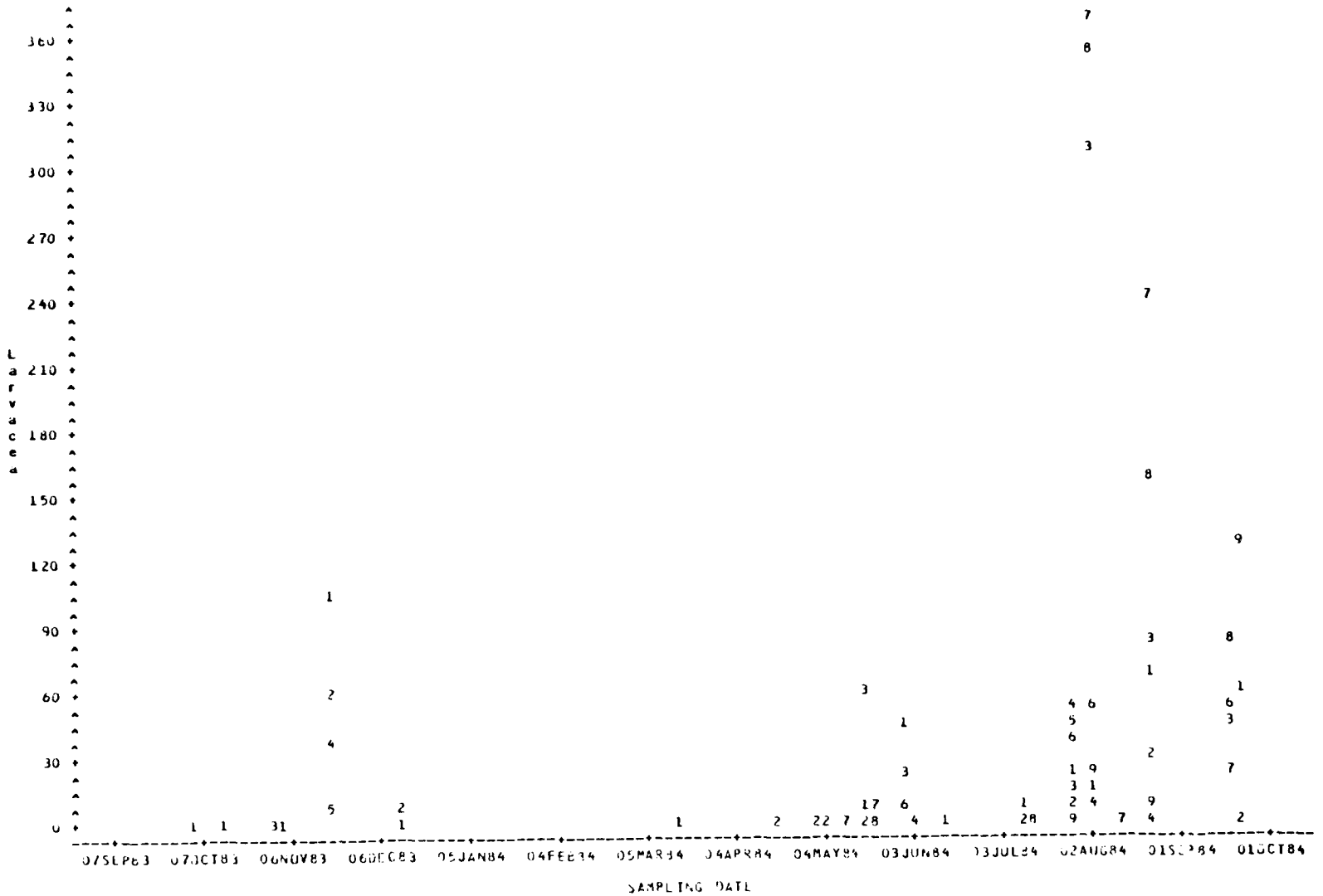
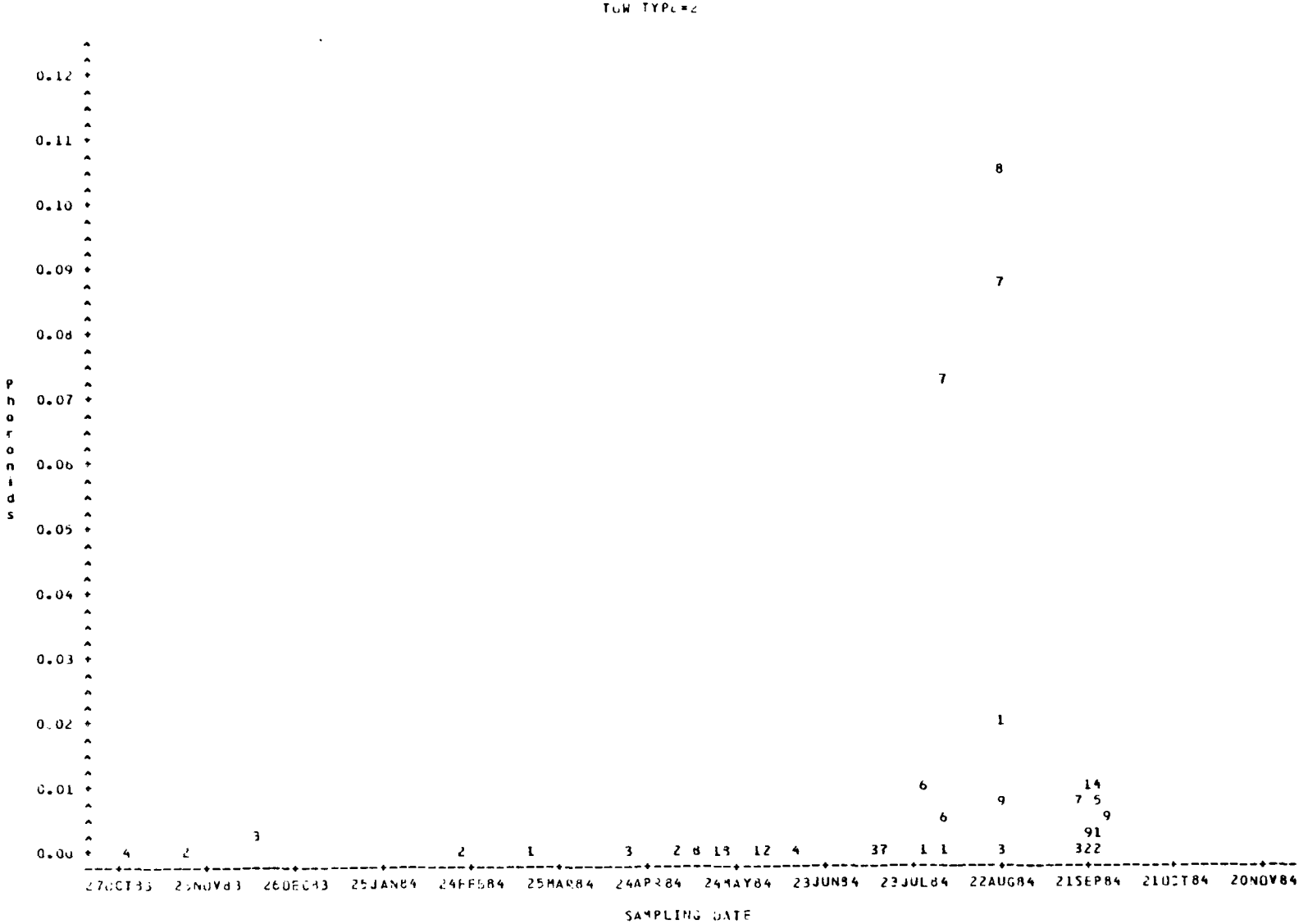

TOW TYPE=2
Larvae
0
5
10
15
20
25
30
35
40
45
50
55
60
27OCT83
26NOV83
26DEC83
25JAN84
24FEB84
25MAR84
24APR84
24MAY84
23JUN84
23JUL84
22AUG84
21SEP84
21OCT84
20NOV84
SAMPLING DATE
NOTE: 40 TOWS HIDDEN

Figure A60.



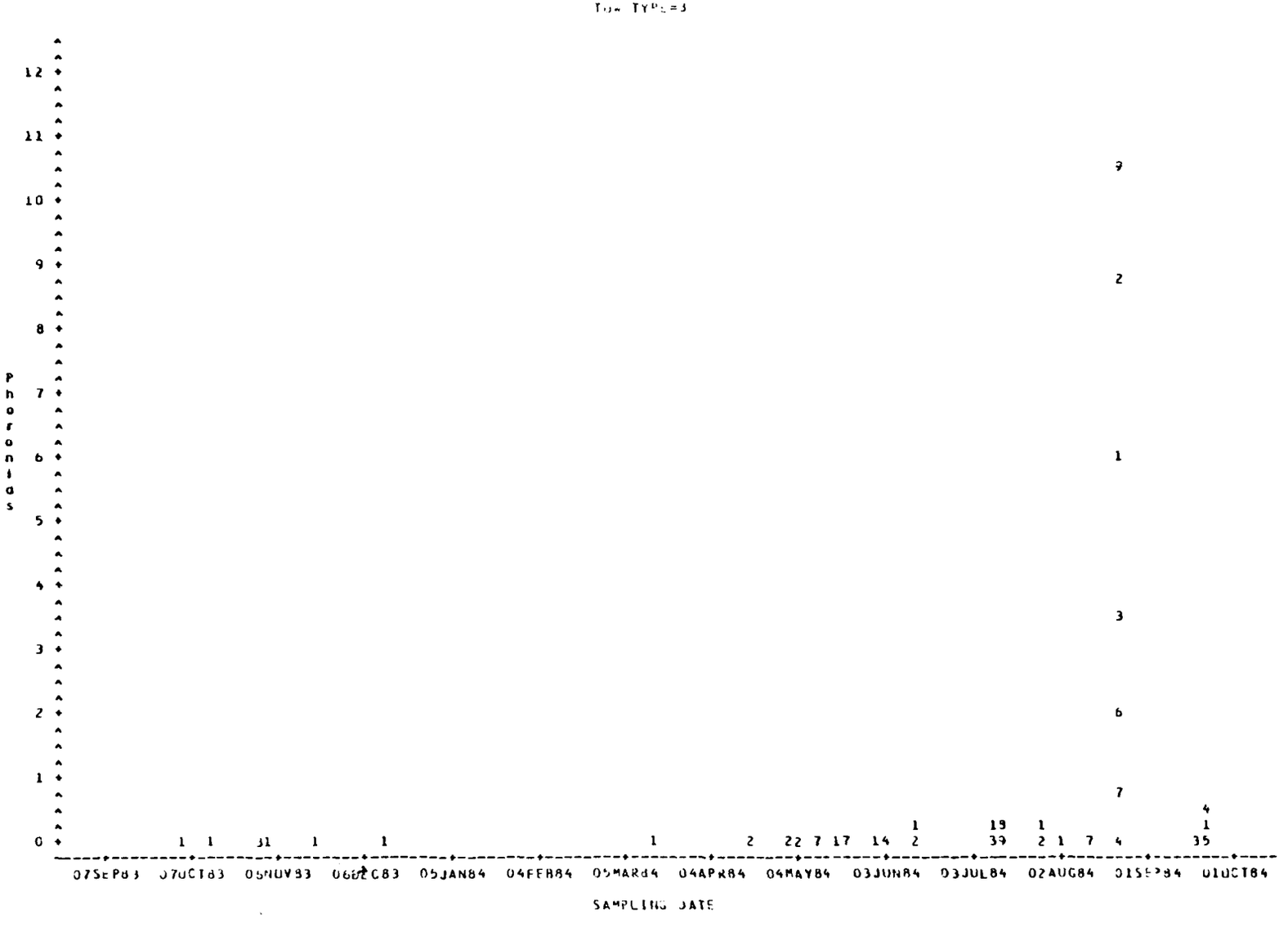
NOTE: 40 DAYS HIDDEN

Figure A61.



NOTE: 44 OBS HIDDEN

Figure A62.



NOTE: 61 OBS HIDDEN

TABLE A1. List of taxonomic groups observed at the DNDS study area Oct. 1983 - Sept. 1984.

ANNELIDA : POLYCHAETA

Polychaeta	Autolytus spp
Polychaeta	Capitellidae
Polychaeta	Magelonidae
Polychaeta	Nephtys sp
Polychaeta	Nereidae
Polychaeta	Nereis succinea Heteronereid
Polychaeta	Spionidae
Polychaeta	Syllides verilli
Polychaeta	Terebellidae spp
Polychaeta	Tomopteris spp
Polychaeta	Trochophores & Nectochaetes
Polychaete A	
Polychaete F	

MOLLUSCA

All Bivalves
Anadara spp
Bivalve B
Bivalve I
Gastropods
Nemertine Pilidium larva
Other Bivalves
Spisula solidissima

ARTHROPODA : CRUSTACEA

Acetes carolinae
Alphaeus heterochaelis
Alphaeus normanni
Barnacle nauplius
Bowmaniella dissimilis
Callianassa spp
Callinectes sp megalopa
Callinectes sp zoea
Cancellaria reticulata
Cancer #2 zoea
Cancer irroratus zoea
Cancer sp megalopa
Crangon septemspinosa
Dissodactylus mellitae zoea
Emerita talpoida
Euceramus praelongus
Hippolyte pleuracantha
Lepidopa websteri
Leptochela serratorbita
Libinia dubia Megalopa
Libinia emarginata Megalopa
Libinia spp zoea
Lucifer Faxoni
Megalopa A
Megalopa B
Metamysidopsis
Mysid
Mysidopsis bigelowi
Naushonia crangonoides
Neomysis americana
Ocypode sp zoea
Ogyrides limicola
Ovalipes quadulpensis megalopa
Ovalipes quadulpensis zoea
Ovalipes zoea
Pagurid Crabs
Palaemonetes spp
Palaemonidae palaemoninae
Penaeid shrimp
Persephone punctata
Pinnixa spp
Pinnotheres spp
Pinnotheres zoea
Portunid crab
Portunus sp zoea
Portunus spinicarpus Megalopa
Sesarma sp zoea
Shrimp 6
Squilla (empusa?) protozoea
Squillid Antizoea
Uca spp
Upogebia affinis
Xanthid Crabs

VERTEBRATA : PISCES

All Fisheggs	
Ammodytidae	Ammodytes hexapterus
Anthrinidae	Membras martinica
Atherinidae	Menidia menidia
Belonidae	Tylosurus crocodilis
Blenidae	Hypsoblennius hentzi
Bothidae	Etropus microstomus
Bothidae	Paralichthys dentatus
Bothidae	Scophthalmus aquosus
Bothidae egg	
Bothidae spp	
Clupeidae	Brevoortia tyrannus
Cynoglossidae	Symphurus plagiusa
Engraulidae	Anchoa mitchelli
Engraulidae egg	
Engraulidae fry	
Fish - unknown	
Gadidae	Urophysis regius
Gobiesocidae	Gobiosox strumosus
Gobiidae	Gobiosoma bosci
Hemiramphidae	Hyporhamphus unifasciatus
Lophidae	Lophius americana
Mugilidae	Mugil sp
Ophidae	Rissola marginata
Other Fish Eggs	
Pomatomidae	Pomatomus saltatrix
Sciaenidae	Cynocion regalis
Sciaenidae	Leiostomus xanthurus
Sciaenidae egg	
Sciaenidae spp	
Strumateidae	Peprilus triacanthus
Syngnathidae	Hippocampus eratus
Syngnathidae	Syngnathus fuscus
Tetraodontidae	Sphaeroides maculatus
Triglidae	Prionotus carolinus
Unidentifiable fish	

MISCELLANEOUS

Larvacea
Phoronida

Table A2. Summary statistics for each station/tow type combination. Tow type = 2 are the neuston tows, while tow type = 3 are the obliques. The "MNMNABUN" column are the grand means of the individual cruise means (n=4) for the station/tow type, while "SEMNABUN" are the standard errors of these values. The "MXMNABUN" are the maximum cruise means observed for the station/tow type. The "POCCUR" column is the percent occurrence of the groups for the station/tow type. The "PCOVER" values represent the percent occurrence of the groups over an abundance level of $10/m^3$ for the station/tow type.

TYPE=2 SITE=1

NAME	MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Engraulidae egg	62.5974	25.4483	245.949	52.9412	41.1765
Callinectes sp zoea	57.3084	44.9236	364.425	47.0588	11.7647
Other Fish Eggs	4.1350	1.2960	6.723	35.2941	.
All Fisheggs	2.9181	1.1559	11.098	76.4706	5.8824
Larvacea	2.0879	1.5277	9.688	35.2941	.
Sciaenidae egg	1.4431	0.5506	4.375	52.9412	.
Crangon septemspinosa	0.9290	0.4632	4.669	70.5882	.
Lucifer Faxoni	0.6645	0.6152	3.738	35.2941	.
Engraulidae fry	0.5000	0.3650	2.306	35.2941	.
Polychaeta Spionidae	0.4284	0.4119	2.487	35.2941	.
Uca spp	0.3325	0.1446	0.969	47.0588	.
Xanthid Crabs	0.2055	0.1082	0.678	35.2941	.
Cancer sp megalopa	0.1988	0.0667	0.265	11.7647	.
Upogebia affinis	0.1891	0.0782	0.527	35.2941	.
Cancer irroratus zoea	0.1692	0.1403	0.869	35.2941	.
Palaemonetes spp	0.1611	0.0964	0.508	29.4118	.
Ovalipes quadulpensis zoea	0.1317	0.0576	0.380	35.2941	.
Squillid Antizoea	0.1243	0.0757	0.451	35.2941	.
Anthrinidae Membras martinica	0.0917	0.0418	0.239	29.4118	.
Callianassa spp	0.0761	.	0.076	5.8824	.
Emerita talpoida	0.0616	0.0522	0.218	23.5294	.
Megalopa A	0.0493	.	0.049	5.8824	.
Polycnaeta Nereidae	0.0388	0.0255	0.064	11.7647	.
Blenilidae Hypsoblennius hentzi	0.0377	.	0.038	5.8824	.
Gastropods	0.0363	0.0164	0.069	17.6471	.
Pagurid Crabs	0.0337	0.0104	0.061	23.5294	.
Callinectes sp megalopa	0.0277	0.0146	0.097	35.2941	.
Bothidae egg	0.0274	0.0173	0.096	29.4118	.
Mysidopsis bigelowi	0.0263	0.0237	0.050	11.7647	.
Penaeid shrimp	0.0236	0.0200	0.044	11.7647	.
Polychaeta Capitellidae	0.0215	.	0.022	5.8824	.
Ocypode sp zoea	0.0166	0.0112	0.028	11.7647	.
Neomysis americana	0.0163	0.0066	0.028	23.5294	.
Naushonia crangonoides	0.0123	.	0.013	5.8824	.
Other Bivalves	0.0127	0.0002	0.013	11.7647	.
Phoronida	0.0111	0.0051	0.021	17.6471	.
All Bivalves	0.0109	0.0018	0.013	17.6471	.
Portunus sp zoea	0.0105	.	0.011	5.8824	.
Polychaeta Autolytus spp	0.0096	0.0043	0.018	17.6471	.
Squilla lempusa?) protozoea	0.0091	0.0038	0.013	11.7647	.
Atherinidae Menidia menidia	0.0090	0.0018	0.011	17.6471	.
Pinnotheres spp	0.0090	0.0045	0.018	17.6471	.
Bothidae Scophthalmus aquasus	0.0086	0.0029	0.012	11.7647	.
Euceramus *praelongus*	0.0077	0.0035	0.011	11.7647	.
Bivalve B	0.0072	.	0.007	5.8824	.
Portunus spinicarpus Megalopa	0.0067	.	0.007	5.8824	.
Pinnixa spp	0.0063	0.0019	0.012	23.5294	.
Pomatomidae Pomatomus saltatrix	0.0062	.	0.006	5.8824	.
Polychaeta Terebellidae spp	0.0060	0.0030	0.009	11.7647	.
Clupeidae Brevoortia tyrannus	0.0055	.	0.006	5.8824	.
Mugilidae Mugil sp	0.0054	.	0.005	5.8824	.
Nemertine Pilidium larva	0.0054	.	0.005	5.8824	.
Ammodytidae Ammodytes hexapterus	0.0045	.	0.004	5.8824	.
Engraulidae Anchoa mitchelli	0.0045	.	0.004	5.8824	.

TYPE=2 SITE=1

NAME		MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Polychaeta	Trochophores & Nectochaetes	0.00442000	.	0.00442000	5.8824	.
Sciaenidae	Cynocion regalis	0.00422500	.	0.00422500	5.8824	.
Triglidae	Prionotus carolinus	0.00422500	.	0.00422500	5.8824	.
Libinia dubia Megalopa		0.00422500	.	0.00422500	5.8824	.
Bowmaniella dissimilis		0.00393417	0.000278322	0.00448750	17.6471	.
Lepidopa websteri		0.00382250	.	0.00382250	5.8824	.
Gyyrides limicola		0.00360750	.	0.00360750	5.8824	.
Gadidae	Urophysis regius	0.00360750	.	0.00360750	5.8824	.

TYPE=2 SITE=10

NAME		MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Engraulidae egg		87.4714	45.8234	412.359	47.3684	26.3158
Other Fish Eggs		37.7029	36.3289	219.318	31.5789	5.2632
Callinectes sp zoea		35.3619	18.8975	165.678	47.3684	15.7895
All Fisheggs		20.1181	18.2360	220.465	63.1579	5.2632
Crangon septemspinosa		8.4074	7.9170	95.458	63.1579	5.2632
Uca spp		3.0858	2.4355	19.970	42.1053	5.2632
Sciaenidae egg		1.4957	0.8800	9.057	52.6316	.
Palaemonetes spp		1.0713	0.8089	5.085	31.5789	.
Ovalipes quadulpensis zoea		0.2723	0.2551	1.803	36.8421	.
Upogebia affinis		0.2547	0.0965	0.723	31.5789	.
Stromateidae	Peprilus triacanthus	0.2213	0.2148	0.436	10.5263	.
Xanthid Crabs		0.2145	0.0839	0.625	36.8421	.
Cancer irroratus zoea		0.2137	0.1628	1.830	57.8947	.
Engraulidae fry		0.1622	0.0398	0.208	15.7895	.
Squillid Antizoea		0.1599	0.1411	0.723	26.3158	.
Larvacea		0.1591	0.0837	0.638	36.8421	.
Gobiesucidae	Gobiosox strumosus	0.1490	0.1435	0.436	15.7895	.
Atherinidae	Menidia menidia	0.1091	0.0642	0.470	36.8421	.
Blenliidae	Hypsoblennius hentzi	0.0954	0.0806	0.256	15.7895	.
Cancer sp megalopa		0.0918	0.0588	0.151	10.5263	.
Anthrinidae	Membras martinica	0.0885	0.0611	0.386	31.5789	.
Polychaeta	Autolytus spp	0.0686	0.0491	0.443	47.3684	.
Polychaeta	Terebellidae spp	0.0665	0.0352	0.130	21.0526	.
Lucifer Faxoni		0.0655	0.0305	0.213	31.5789	.
Bothidae egg		0.0604	0.0386	0.175	21.0526	.
Ocypode sp zoea		0.0430	0.0371	0.117	15.7895	.
Pagurid Crabs		0.0377	0.0319	0.070	10.5263	.
Emerita talpoida		0.0326	.	0.033	5.2632	.
Pinnixa spp		0.0313	0.0165	0.079	21.0526	.
Callianassa spp		0.0307	0.0233	0.077	15.7895	.
Polychaeta	Nereidae	0.0229	0.0113	0.034	10.5263	.
Gastropods		0.0226	0.0080	0.033	15.7895	.
Polychaeta	Spionidae	0.0168	0.0049	0.041	47.3684	.
Eucerumus praelongus		0.0140	.	0.014	5.2632	.
Libinia emarginata Megalopa		0.0139	.	0.014	5.2632	.
Engraulidae	Anchoa mitchelli	0.0138	.	0.014	5.2632	.
All Bivalves		0.0129	.	0.013	5.2632	.
Cancer #2 zoea		0.0129	.	0.013	5.2632	.
Mysidopsis Bigelowi		0.0125	0.0074	0.027	15.7895	.
Bivalve I		0.0105	.	0.010	5.2632	.
Other Bivalves		0.0096	.	0.010	5.2632	.
Penaeid shrimp		0.0093	0.0041	0.017	15.7895	.
Nemertine Pilidium larva		0.0093	.	0.009	5.2632	.
Callinectes sp megalopa		0.0073	0.0024	0.011	15.7895	.
Bowmaniella dissimilis		0.0077	0.0010	0.009	10.5263	.
Neomysis americana		0.0076	0.0028	0.013	15.7895	.
Pinnotheres spp		0.0072	0.0017	0.009	15.7895	.
Lepidopa websteri		0.0066	0.0029	0.009	10.5263	.
Portunus spinicarpus Megalopa		0.0056	.	0.006	5.2632	.
Squilla (empusa?) protozoea		0.0056	0.0008	0.006	10.5263	.
Lophiidae	Lophius americana	0.0049	.	0.005	5.2632	.
Libinia dubia Megalopa		0.0047	.	0.005	5.2632	.
Ammodytidae	Ammodytes hexapterus	0.0047	0.0005	0.005	10.5263	.
Gadidae	Urophysis regius	0.0041	0.0005	0.005	10.5263	.

TYPE 2 SITE=10

NAME		MNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Polychaeta	Nephtys sp	0.00381000	.	0.00381000	5.26316	.
Bothidae	Scophthalmus aquasus	0.00363500	.	0.00363500	5.26316	.
Libinia spp zoea		0.00344750	.	0.00344750	5.26316	.
Bivalve B		0.00335750	.	0.00335750	5.26316	.
Sciaenidae	Cynoscion regalis	0.00313000	.	0.00313000	5.26316	.

TYPE=2 SITE=11

NAME		MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Engraulidae egg		38.7913	15.0588	131.995	58.8235	23.5294
Callinectes sp zoea		19.2298	8.3830	58.891	47.0588	23.5294
Larvacea		11.7856	6.5088	54.636	58.8235	17.6471
Other Fish Eggs		4.0918	4.0552	16.257	23.5294	5.8824
Callinectes sp megalopa		3.5372	3.5046	14.051	23.5294	5.8824
Cancer irroratus zoea		2.6977	2.6654	18.690	41.1765	5.8824
Cancer sp megalopa		2.4514	1.7967	6.040	17.6471	.
All Fisheggs		1.8115	1.1866	16.908	82.3529	5.8824
Lucifer Faxoni		1.3585	0.9317	5.965	35.2941	.
Sciaenidae egg		0.8937	0.3115	3.402	58.8235	.
Squillid Antizoea		0.7847	0.7541	4.555	35.2941	.
Engraulidae fry		0.2832	0.1784	0.793	23.5294	.
Gastropods		0.2529	0.1569	0.772	35.2941	.
Crangon septemspinosa		0.1542	0.0757	0.840	64.7059	.
Megalopa A		0.1462	0.1416	0.288	11.7647	.
Palaemonetes spp		0.1397	0.1243	0.512	23.5294	.
Ovalipes quadulpensis zoea		0.1209	0.0713	0.366	29.4118	.
Upogebia affinis		0.1194	0.0758	0.408	29.4118	.
Nemertine Pilidium larva		0.1113	0.0999	0.411	23.5294	.
Uca spp		0.0969	0.0207	0.189	41.1765	.
Xanthid Crabs		0.0867	0.0479	0.224	23.5294	.
Pinnixa spp		0.0807	0.0318	0.153	29.4118	.
Sciaenidae	Cynocion regalis	0.0607	0.0497	0.110	11.7647	.
Clupeidae	Brevoortia tyrannus	0.0590	.	0.059	5.8824	.
Blenilidae	Hypsoblennius hentzi	0.0421	0.0249	0.088	17.6471	.
Gadilidae	Urophysis regius	0.0400	0.0313	0.071	11.7647	.
Alphaeus heterochaelis		0.0393	.	0.039	5.8824	.
Anthrinidae	Membras martinica	0.0361	0.0142	0.065	23.5294	.
Polychaeta	Magelonidae	0.0351	.	0.035	5.8824	.
Portunus spinicarpus Megalopa		0.0345	0.0113	0.048	17.6471	.
Bowmaniella dissimilis		0.0344	0.0163	0.051	11.7647	.
Polychaeta	Spionidae	0.0335	0.0226	0.146	35.2941	.
Ocypode sp zoea		0.0335	.	0.033	5.8824	.
Lophiidae	Lophius americana	0.0321	.	0.032	5.8824	.
Ammodytidae	Ammodytes hexapterus	0.0307	0.0206	0.071	17.6471	.
Pagurid Crabs		0.0251	0.0100	0.060	35.2941	.
Bothidae egg		0.0191	0.0099	0.038	17.6471	.
Libinia spp zoea		0.0180	.	0.018	5.8824	.
Polychaeta	Nereidae	0.0179	.	0.018	5.8824	.
Polychaeta	Terebellidae spp	0.0160	0.0060	0.022	11.7647	.
Portunus sp zoea		0.0139	.	0.014	5.8824	.
Squilla (empusa?) protozoea		0.0137	0.0089	0.040	23.5294	.
Penaeid shrimp		0.0100	.	0.010	5.8824	.
Callianassa spp		0.0098	0.0038	0.016	17.6471	.
Tetraodontidae	Sphaeroides maculatus	0.0097	.	0.009	5.8824	.
Libinia dubia Megalopa		0.0084	.	0.008	5.8824	.
Mysidopsis bigelowi		0.0073	0.0047	0.022	23.5294	.
Metamysidopsis		0.0073	.	0.007	5.8824	.
Portunid crab		0.0073	.	0.007	5.8824	.
Bivalve I		0.0073	0.0036	0.011	11.7647	.
Atherinidae	Menidia menidia	0.0072	0.0045	0.021	23.5294	.
Syngnathidae	Syngnathus fuscus	0.0067	.	0.007	5.8824	.
Neomysis americana		0.0064	0.0004	0.007	11.7647	.
Oyyrides limicola		0.0062	.	0.006	5.8824	.

TYPE=2 SITE=11

NAME		MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Pomatomidae	Pomatomus saltatrix	0.00541500	0.00088500	0.00630000	11.7647	.
Euceramus praelongus		0.00495000	0.00127500	0.00622500	11.7647	.
Engraulidae	Anchoa mitchelli	0.00479167	0.00038619	0.00550750	17.6471	.
Bothidae	Paralichthys dentatus	0.00464750	.	0.00464750	5.8824	.
Polychaeta	Autolytus spp	0.00382083	0.00122298	0.00620250	17.6471	.
Other Bivalves		0.00378125	0.00076125	0.00454250	11.7647	.
All Bivalves		0.00378125	0.00076125	0.00454250	11.7647	.
Polychaeta	Capitellidae	0.00293500	.	0.00293500	5.8824	.
Mugilidae	Mugil sp	0.00288250	.	0.00288250	5.8824	.
Lepidopa websteri		0.00275500	.	0.00275500	5.8824	.
Belonidae	Tylosurus crocodilis	0.00275250	.	0.00275250	5.8824	.
Phoronida		0.00259000	.	0.00259000	5.8824	.
Acetes carolinae		0.00246000	.	0.00246000	5.8824	.

TYPE=2 SITE=12

NAME	MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Engraulidae egg	32.6810	12.5539	114.847	50.0000	27.7778
Callinectes sp zoea	5.9777	4.7039	38.307	44.4444	5.5556
Squillid Antizoea	2.4462	2.4242	9.719	22.2222	.
All Fisheggs	0.6045	0.2867	3.289	61.1111	.
Upogebia affinis	0.4934	0.4805	1.935	22.2222	.
Sciaenidae egg	0.4628	0.1434	1.309	50.0000	.
Anthrinidae Membras martinica	0.4298	0.1707	0.963	27.7778	.
Other Fish Eggs	0.4094	0.3201	1.981	33.3333	.
Crangon septemspinosa	0.3969	0.2096	2.489	72.2222	.
Engraulidae fry	0.3672	0.0679	0.500	16.6667	.
Larvacea	0.3609	0.1856	1.827	61.1111	.
Callinectes sp megalopa	0.2781	0.2480	1.515	33.3333	.
Xanthid Crabs	0.1862	0.1696	0.863	27.7778	.
Lucifer Faxoni	0.1731	0.1234	0.899	38.8889	.
Uca spp	0.1333	0.0874	0.650	38.8889	.
Atherinidae Menidia menidia	0.1200	0.1147	0.693	33.3333	.
Palaemonetes spp	0.1052	0.0585	0.209	16.6667	.
Ocypode sp zoea	0.1004	0.0893	0.190	11.1111	.
Ovalipes quadulpensis zoea	0.0888	0.0451	0.229	27.7778	.
Pagurid Crabs	0.0751	0.0512	0.176	16.6667	.
Cancer sp megalopa	0.0653	0.0301	0.122	16.6667	.
Cancer irroratus zoea	0.0572	0.0271	0.156	27.7778	.
Pinnixa spp	0.0349	0.0268	0.088	16.6667	.
Polychaeta Autolytus spp	0.0338	0.0078	0.042	11.1111	.
Polychaeta Spionidae	0.0323	0.0115	0.098	50.0000	.
Polychaeta Capitellidae	0.0297	.	0.030	5.5556	.
Emerita talpoida	0.0296	0.0110	0.041	11.1111	.
Polychaeta Terebellidae spp	0.0292	0.0189	0.048	11.1111	.
Callianassa spp	0.0245	.	0.025	5.5556	.
Pinnotheres spp	0.0220	.	0.022	5.5556	.
Cancer #2 zoea	0.0164	.	0.016	5.5556	.
Bothidae egg	0.0140	0.0044	0.018	11.1111	.
Mysidopsis bigelowi	0.0121	0.0014	0.014	11.1111	.
Engraulidae Anchoa mitchelli	0.0116	.	0.012	5.5556	.
Megalopa A	0.0116	0.0058	0.023	16.6667	.
Squilla (empusa?) protozoea	0.0098	0.0058	0.016	11.1111	.
Bothidae Scophthalmus aquasus	0.0098	.	0.010	5.5556	.
Phoronida	0.0096	.	0.010	5.5556	.
Belonidae Tylosurus crocodilis	0.0092	.	0.009	5.5556	.
Blenidae Hypsoblennius hentzi	0.0082	0.0036	0.015	16.6667	.
Gadidae Urophysis regius	0.0079	.	0.008	5.5556	.
Polychaeta Nereidae	0.0076	0.0034	0.011	11.1111	.
Nemertine Pilidium larva	0.0076	0.0010	0.009	11.1111	.
Gastropods	0.0076	0.0018	0.013	27.7778	.
Oyyrides limicola	0.0065	0.0022	0.009	11.1111	.
Neomysis americana	0.0054	0.0010	0.008	27.7778	.
Libinia spp zoea	0.0053	0.0003	0.006	11.1111	.
Other divalves	0.0048	.	0.005	5.5556	.
All divalves	0.0046	.	0.005	5.5556	.
Portunus spinicarpus Megalopa	0.0047	.	0.005	5.5556	.
Sciaenidae Cynoscion regalis	0.0031	.	0.003	5.5556	.
Bowmaniella dissimilis	0.0020	.	0.002	5.5556	.

TYPE=2 SITE=13

NAME		MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Other Fish Eggs		18.4534	10.7463	53.1210	33.3333	11.1111
Engraulidae egg		13.8503	7.9027	74.4586	50.0000	22.2222
All Fisheggs		12.8154	7.7154	53.8495	50.0000	11.1111
Callinectes sp zoea		2.6299	1.4596	11.0206	44.4444	5.5556
Crangon septemspinosa		1.4449	0.9634	10.0103	72.2222	5.5556
Sciaenidae egg		0.5761	0.1679	1.6263	44.4444	.
Squillid Antizoea		0.4672	0.2644	0.9572	22.2222	.
Bothidae spp		0.2788	.	0.2788	5.5556	.
Palaemonetes spp		0.2672	0.1073	0.5076	22.2222	.
Other Bivalves		0.2269	0.2232	0.4501	11.1111	.
All Bivalves		0.2269	0.2232	0.4501	11.1111	.
Larvacea		0.2057	0.1024	0.9200	50.0000	.
Engraulidae fry		0.1467	0.0580	0.2714	27.7778	.
Engraulidae	Anchoa mitchelli	0.1407	0.1085	0.2492	11.1111	.
Anthrinidae	Membras martinica	0.1194	0.0895	0.5630	33.3333	.
Uca spp		0.1126	0.0449	0.3734	44.4444	.
Upogebia affinis		0.1051	0.0837	0.3355	22.2222	.
Cancer sp megalopa		0.0819	0.0760	0.1579	11.1111	.
Squilla (empusa?) protozoea		0.0726	0.0581	0.1882	16.6667	.
Megalopa A		0.0647	.	0.0647	5.5556	.
Polychaeta	Spionidae	0.0613	0.0332	0.2658	44.4444	.
Atherinidae	Menidia menidia	0.0389	0.0110	0.0594	22.2222	.
Cancer irroratus zoea		0.0389	0.0254	0.2405	50.0000	.
Ovalipes quadulpensis zoea		0.0370	0.0188	0.1056	27.7778	.
Callinectes sp megalopa		0.0346	0.0133	0.0606	16.6667	.
Xanthid Crabs		0.0270	0.0118	0.0742	33.3333	.
Blenidae	Hypsoblennius hentzi	0.0260	0.0125	0.0385	11.1111	.
Naushonia crangonoides		0.0220	.	0.0220	5.5556	.
Euceramus praelongus		0.0204	0.0122	0.0567	22.2222	.
Ocypode sp zoea		0.0203	.	0.0203	5.5556	.
Lucifer Faxoni		0.0191	0.0079	0.0715	44.4444	.
Callianassa spp		0.0157	0.0054	0.0211	11.1111	.
Mysidopsis bigelowi		0.0150	0.0114	0.0264	11.1111	.
Pagurid Crabs		0.0145	0.0038	0.0219	22.2222	.
Gastropods		0.0134	0.0088	0.0309	16.6667	.
Neomysis americana		0.0128	0.0061	0.0491	38.8889	.
Emerita talpoida		0.0120	0.0050	0.0257	22.2222	.
Hippolyte pleuracantha		0.0115	.	0.0115	5.5556	.
Polychaeta	Nereidae	0.0109	.	0.0109	5.5556	.
Bothidae egg		0.0097	.	0.0097	5.5556	.
Phoronida		0.0084	.	0.0084	5.5556	.
Portunus spinicarpus Megalopa		0.0067	.	0.0067	5.5556	.
Lophiidae	Lophius americana	0.0064	.	0.0064	5.5556	.
Polychaeta	Trochophores & Nectochaetes	0.0063	.	0.0063	5.5556	.
Pinnixa spp		0.0059	0.0012	0.0076	16.6667	.
Libinia spp zoea		0.0057	.	0.0057	5.5556	.
Bothidae	Paralichthys dentatus	0.0057	.	0.0057	5.5556	.
Tetraodontidae	Sphaeroides maculatus	0.0051	.	0.0051	5.5556	.
Nemertine Pilidium larva		0.0048	.	0.0048	5.5556	.
Gadidae	Urophysis regius	0.0046	0.0000	0.0046	11.1111	.
Bivalve I		0.0041	.	0.0041	5.5556	.
Polychaeta	Autolytus spp	0.0041	0.0011	0.0060	22.2222	.
Bowmaniella dissimilis		0.0039	0.0002	0.0041	11.1111	.
Pomatomidae	Pomatomus saltatrix	0.0035	.	0.0035	5.5556	.

TYPE=2 SITE=20

NAME		MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Callinectes sp megalopa		54.2352	54.1957	162.627	30.0000	10.0000
Callinectes sp zoea		30.1541	25.5254	207.733	80.0000	20.0000
Engraulidae egg		27.9187	11.9526	97.241	90.0000	50.0000
Larvacea		7.7549	4.7819	30.182	80.0000	20.0000
Nemertine Pilidium larva		2.2337	.	2.234	10.0000	.
All Fisheggs		1.1300	0.4283	3.943	90.0000	.
Other Fish Eggs		0.8416	0.4819	2.364	60.0000	.
Cancer sp megalopa		0.8038	0.5805	1.384	20.0000	.
Lucifer Faxoni		0.7449	0.3966	1.993	50.0000	.
Sciaenidae egg		0.5551	0.1889	1.553	90.0000	.
Polychaeta	Splonidae	0.5115	0.4886	1.489	30.0000	.
Cancer irroratus zoea		0.4843	0.4461	1.376	30.0000	.
Squilla (empusa?) protozoea		0.4248	0.4123	0.837	20.0000	.
Crangon septemspinosa		0.4138	0.2608	1.423	50.0000	.
Penaeid shrimp		0.4027	0.2953	0.698	20.0000	.
Gastropods		0.3454	0.2329	0.791	30.0000	.
Palaemonetes spp		0.2492	0.2261	0.927	40.0000	.
Squillid Antizoea		0.2078	0.0798	0.378	40.0000	.
Uca spp		0.1791	0.1089	0.702	60.0000	.
Upogebia affinis		0.1469	0.0581	0.388	60.0000	.
Xanthid Crabs		0.1071	0.0555	0.321	50.0000	.
Ovalipes quadulpensis zoea		0.0732	0.0537	0.285	50.0000	.
Pagurid Crabs		0.0698	0.0574	0.299	50.0000	.
Gadidae	Urophysis regius	0.0693	0.0527	0.122	20.0000	.
Botnidae egg		0.0521	0.0364	0.098	20.0000	.
Engraulidae fry		0.0588	0.0328	0.152	40.0000	.
Bowmaniella dissimilis		0.0562	.	0.056	10.0000	.
Mysid		0.0560	.	0.056	10.0000	.
Pinnixa spp		0.0545	0.0472	0.149	30.0000	.
Bivalve B		0.0499	.	0.050	10.0000	.
All Bivalves		0.0499	.	0.050	10.0000	.
Blenilidae	Hypsoblennius hentzi	0.0440	0.0260	0.096	30.0000	.
Megalopa A		0.0417	.	0.042	10.0000	.
Polychaeta	Trochophores & Nectochaetes	0.0363	0.0191	0.055	20.0000	.
Emerita talpoida		0.0208	.	0.021	10.0000	.
Sciaenidae	Cynocion regalis	0.0195	.	0.019	10.0000	.
Portunus spinicarpus Megalopa		0.0188	0.0047	0.024	20.0000	.
Pinnotheres spp		0.0175	.	0.018	10.0000	.
Polychaeta	Terebellidae spp	0.0173	.	0.017	10.0000	.
Anthrinidae	Membras martinica	0.0144	0.0092	0.033	30.0000	.
Euceramus praelongus		0.0133	.	0.013	10.0000	.
Callianassa spp		0.0112	.	0.011	10.0000	.
Engraulidae	Anchoa mitchelli	0.0109	0.0064	0.017	20.0000	.
Polychaeta	Capitellidae	0.0087	.	0.009	10.0000	.
Ocypode sp zoea		0.0076	0.0007	0.008	20.0000	.
Pomatomidae	Pomatomus saltatrix	0.0068	0.0024	0.012	30.0000	.
Phoronida		0.0063	0.0025	0.009	20.0000	.
Atherinidae	Menidia menidia	0.0064	0.0005	0.007	30.0000	.
Polychaeta	Autolytus spp	0.0064	0.0021	0.008	20.0000	.
Ammodytidae	Ammodytes hexapterus	0.0054	.	0.005	10.0000	.
Lophiidae	Lophius americana	0.0054	.	0.005	10.0000	.
Gobiidae	Gobiosoma bosci	0.0047	.	0.005	10.0000	.
Tetraodontidae	Sphaeroides maculatus	0.0043	.	0.004	10.0000	.
Mugilidae	Mugil sp	0.0041	.	0.004	10.0000	.

TYPE=2 SITE=21

NAME		MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Engraulidae egg		61.4061	25.4153	200.179	100.000	77.7778
All Fisheggs		12.4146	11.0279	100.483	100.000	11.1111
Sciaenidae egg		11.3199	11.1326	100.379	100.000	11.1111
Callinectes sp zoea		10.5573	4.4126	34.657	77.778	22.2222
Nemertine Pilidium larva		4.0589	.	4.059	11.111	.
Larvacea		3.0255	2.0685	11.161	55.556	11.1111
Other Fish Eggs		2.4340	1.2885	6.218	44.444	.
Cancer sp megalopa		1.2908	0.5576	1.848	22.222	.
Clupeidae	Brevoortia tyrannus	0.7681	.	0.768	11.111	.
Crangon septemspinosa		0.5370	0.3379	1.884	55.556	.
Cancer irroratus zoea		0.2793	0.2234	0.725	33.333	.
Squillid Antizoea		0.2764	0.2422	1.245	55.556	.
Engraulidae fry		0.2582	0.1207	0.554	44.444	.
Polychaeta	Terebellidae spp	0.1880	.	0.188	11.111	.
Lucifer Faxoni		0.1698	0.0667	0.305	44.444	.
Upogebia affinis		0.1434	0.1207	0.504	44.444	.
Gastropods		0.1384	0.1314	0.401	33.333	.
Uca spp		0.1279	0.0609	0.482	88.889	.
Palaemonetes spp		0.1264	0.0901	0.305	33.333	.
Anthrinidae	Membras martinica	0.0998	0.0960	0.196	22.222	.
Ocypode sp zoea		0.0803	0.0723	0.153	22.222	.
Polychaeta	Spionidae	0.0792	0.0321	0.229	66.667	.
Polychaeta	Trochophores & Nectochaetes	0.0700	.	0.070	11.111	.
Atherinidae	Menidia menidia	0.0601	0.0538	0.275	55.556	.
Phoronida		0.0558	0.0246	0.087	33.333	.
Ovalipes quadulpensis zoea		0.0539	0.0380	0.167	44.444	.
Penaeid shrimp		0.0478	.	0.048	11.111	.
Xanthid Crabs		0.0441	0.0209	0.107	55.556	.
Bothidae egg		0.0388	0.0330	0.105	33.333	.
Sesarma sp zoea		0.0363	.	0.036	11.111	.
Engraulidae	Anchoa mitchelli	0.0297	.	0.030	11.111	.
Portunus spinicarpus Megalopa		0.0260	0.0090	0.039	33.333	.
Other Bivalves		0.0232	.	0.023	11.111	.
All Bivalves		0.0232	.	0.023	11.111	.
Polychaeta	Nereidae	0.0193	0.0113	0.031	22.222	.
Tetraodontidae	Sphaeroides maculatus	0.0137	.	0.014	11.111	.
Ammodytidae	Ammodytes hexapterus	0.0137	.	0.014	11.111	.
Callinectes sp megalopa		0.0133	0.0052	0.023	33.333	.
Libinia spp zoea		0.0120	.	0.012	11.111	.
Squilla (empusa?) protozoea		0.0112	0.0049	0.016	22.222	.
Pagurid Crabs		0.0100	0.0062	0.016	22.222	.
Polychaete F		0.0099	.	0.010	11.111	.
Pomatomidae	Pomatomus saltatrix	0.0099	.	0.010	11.111	.
Sciaenidae	Cynocion regalis	0.0083	.	0.008	11.111	.
Neomysis americana		0.0077	.	0.008	11.111	.
Emerita talpoida		0.0077	.	0.008	11.111	.
Gadidae	Urophysis regius	0.0073	.	0.007	11.111	.
Hemiramphidae	Hyporhamphus unifasciatus	0.0054	.	0.005	11.111	.
Blenidae	Hypsoblennius hentzi	0.0050	0.0004	0.005	22.222	.
Stromateidae	Peprilus triacanthus	0.0045	.	0.005	11.111	.
Polychaeta	Autolytus spp	0.0042	0.0001	0.004	22.222	.
Alpheus normanni		0.0041	.	0.004	11.111	.

TYPE=2 SITE=22

NAME		MNMNABUN	SEMNABUN	MXMNABUN	PCOCUR	PCOVER
Engraulidae egg		78.1976	35.1172	280.747	100.000	77.7778
Callinectes sp zoea		20.3795	16.9518	138.791	88.889	11.1111
All Fisheggs		12.5713	10.8800	99.211	100.000	11.1111
Sciaenidae egg		11.1689	10.9974	99.146	100.000	11.1111
Cancer irroratus zoea		8.7473	8.7278	17.475	22.222	11.1111
Other Fish Eggs		2.5109	1.8452	9.672	55.556	.
Larvacea		2.0595	0.8036	5.567	77.778	.
Crangon septemspinosa		1.9742	1.7317	8.894	55.556	.
Cancer sp megalopa		0.7065	0.6041	1.311	22.222	.
Blenidae	Hypsoblennius hentzi	0.3471	0.3349	1.017	33.333	.
Squillid Antizoea		0.2050	0.0756	0.370	44.444	.
Lucifer Faxoni		0.1255	0.0644	0.239	33.333	.
Upogebia affinis		0.1210	0.0858	0.376	44.444	.
Uca spp		0.1163	0.0405	0.271	66.667	.
Callinectes sp megalopa		0.1065	0.1034	0.210	22.222	.
Phoronida		0.1040	.	0.104	11.111	.
Engraulidae fry		0.0870	0.0511	0.222	44.444	.
Ovalipes quadulpensis zoea		0.0795	0.0683	0.216	33.333	.
Squilla (empusa?) protozoea		0.0726	0.0595	0.369	66.667	.
Bothidae egg		0.0646	.	0.065	11.111	.
Palaemonetes spp		0.0628	0.0503	0.213	44.444	.
Polychaeta	Terebellidae spp	0.0494	0.0312	0.081	22.222	.
Portunus spinicarpus Megalopa		0.0464	0.0034	0.050	22.222	.
Engraulidae	Anchoa mitchelli	0.0374	0.0138	0.064	33.333	.
Atherinidae	Menidia menidia	0.0365	0.0235	0.083	33.333	.
Xanthid Crabs		0.0363	0.0192	0.074	33.333	.
Ocypode sp zoea		0.0302	0.0033	0.033	22.222	.
Alphaeus normanni		0.0164	.	0.016	11.111	.
Pinnixa spp		0.0164	.	0.016	11.111	.
Polychaeta	Spionidae	0.0159	0.0038	0.030	66.667	.
Anthrinidae	Membras martinica	0.0156	0.0122	0.028	22.222	.
Emerita talpoida		0.0150	0.0042	0.027	44.444	.
Gastropods		0.0135	0.0043	0.033	66.667	.
Pagurid Crabs		0.0090	0.0018	0.015	55.556	.
Gadidae	Urophysis regius	0.0087	.	0.009	11.111	.
Polychaeta	Autolytus spp	0.0077	.	0.008	11.111	.
Lepidopa websteri		0.0065	.	0.006	11.111	.
Mugilidae	Mugil sp	0.0049	.	0.005	11.111	.
Callianassa spp		0.0045	.	0.004	11.111	.
Pinnotheres spp		0.0039	.	0.004	11.111	.
Pomatomidae	Pomatomus saltatrix	0.0038	0.0001	0.004	22.222	.

TYPE=2 SITE=23

NAME	MNMNABUN	SEMNABUN	MXMNABUN	PUCCUR	PCOVER
Engraulidae egg	34.9033	11.4505	87.7547	100.000	66.6667
Other Fish Eggs	7.6496	5.3026	33.1773	66.667	11.1111
All Fisheggs	5.4373	3.8053	34.7924	100.000	11.1111
Callinectes sp zoea	4.1057	1.6610	12.4310	77.778	11.1111
Larvacea	3.4204	2.4691	15.5548	66.667	11.1111
Squilla Antizoea	0.5749	0.5685	2.8489	55.556	.
Sciaenidae egg	0.3214	0.1840	1.6151	100.000	.
Engraulidae fry	0.2743	0.1967	0.4710	22.222	.
Squilla tempusa?] protozoea	0.2647	.	0.2647	11.111	.
Cancer irroratus zoea	0.2536	0.2125	0.8870	44.444	.
Callinectes sp megalopa	0.2212	0.2141	1.2916	66.667	.
Lucifer Faxoni	0.2158	0.1703	0.7237	44.444	.
Ovalipes quadulpensis zoea	0.1567	0.0879	0.5204	66.667	.
Polychaeta Capitellidae	0.1175	0.1069	0.2244	22.222	.
Pinnixa spp	0.1111	.	0.1111	11.111	.
Emerita talpoida	0.1046	0.0531	0.2359	44.444	.
Palaemonetes spp	0.0960	0.0754	0.3211	44.444	.
Gastropods	0.0946	0.0457	0.1403	22.222	.
Anthrinidae Membras martinica	0.0861	0.0737	0.2333	33.333	.
Cancer sp megalopa	0.0825	.	0.0825	11.111	.
Mysidopsis bigelowi	0.0798	0.0045	0.0844	22.222	.
Bothidae egg	0.0724	0.0663	0.1388	22.222	.
Atherinidae Menidia menidia	0.0703	0.0488	0.2138	44.444	.
Uca spp	0.0608	0.0160	0.1090	66.667	.
Upogebia affinis	0.0569	0.0340	0.2010	66.667	.
Ocypode sp zoea	0.0551	.	0.0551	11.111	.
Xanthid Crabs	0.0508	0.0396	0.1300	33.333	.
Crangon septemspinosa	0.0445	0.0326	0.2070	66.667	.
Penaeid shrimp	0.0440	.	0.0440	11.111	.
Libinia spp zoea	0.0221	.	0.0221	11.111	.
Euceramus praelongus	0.0220	.	0.0220	11.111	.
Pagurid Crabs	0.0200	0.0135	0.0740	55.556	.
Metamysidopsis	0.0160	.	0.0160	11.111	.
Other Bivalves	0.0124	.	0.0124	11.111	.
All Bivalves	0.0124	.	0.0124	11.111	.
Polychaeta Spionidae	0.0106	0.0015	0.0128	33.333	.
Pomatomidae Pomatomus saltatrix	0.0105	.	0.0105	11.111	.
Blenidae Hypsoblennius hentzi	0.0091	0.0056	0.0148	22.222	.
Callianassa spp	0.0084	.	0.0084	11.111	.
Triglidae Prionotus carolinus	0.0080	.	0.0080	11.111	.
Clupeidae Brevoortia tyrannus	0.0052	0.0009	0.0061	22.222	.
Phoronida	0.0046	0.0009	0.0063	33.333	.
Ogyrides limicola	0.0044	.	0.0044	11.111	.
Nemertine Pilidium larva	0.0044	.	0.0044	11.111	.
Acetes carolinae	0.0044	.	0.0044	11.111	.
Portunus spinicarpus Megalopa	0.0044	0.0008	0.0052	22.222	.
Polychaeta Nereidae	0.0043	.	0.0043	11.111	.
Bivalve I	0.0041	.	0.0041	11.111	.
Sciaenidae Cynocion regalis	0.0040	.	0.0040	11.111	.
Bowmaniella dissimilis	0.0043	0.0003	0.0046	33.333	.
Pinnotheres spp	0.0040	.	0.0040	11.111	.
Engraulidae Anchoa mitchelli	0.0035	.	0.0035	11.111	.

TYPE=3 SITE=1

NAME		MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Engraulidae egg		69.8048	27.2637	237.373	52.9412	35.2941
Callinectes sp zoea		24.0905	8.6787	57.283	41.1765	23.5294
Larvacea		23.8054	8.5312	102.904	82.3529	41.1765
Crangon septemspinosa		22.3392	9.6451	141.775	94.1176	29.4118
Sciaenidae egg		5.8952	2.3827	22.427	64.7059	23.5294
Upogebia affinis		5.2960	3.3944	24.776	41.1765	5.8824
Pagurid Crabs		5.2381	1.6279	15.042	70.5882	23.5294
Mysidopsis bigelowi		4.7081	2.8554	21.171	41.1765	5.8824
All Fisheggs		4.6275	1.9162	22.495	88.2353	23.5294
Xanthid Crabs		3.9994	2.1497	21.247	58.8235	5.8824
Uca spp		2.7919	1.1866	8.645	41.1765	.
Ovalipes quadulpensis zoea		2.3134	1.1207	11.665	58.8235	5.8824
Lucifer Faxoni		2.1468	1.5630	15.885	58.8235	5.8824
Palaemonetes spp		1.8839	1.5524	11.166	41.1765	5.8824
Polychaeta	Trochophores & Nectochaetes	1.6498	1.4539	10.362	41.1765	5.8824
Bowmaniella dissimilis		1.5515	0.8679	5.849	41.1765	.
Gastropods		1.5212	0.6692	7.587	64.7059	.
Pinnixa spp		1.3077	0.5404	5.516	58.8235	.
Phoronida		0.9850	0.8461	6.059	41.1765	.
Other Bivalves		0.9784	0.9478	1.926	11.7647	.
Neomysis americana		0.8935	0.3971	4.287	64.7059	.
Polychaeta	Terebellidae spp	0.8195	0.3704	2.887	41.1765	.
Cancer irroratus zoea		0.8182	0.5191	6.932	76.4706	.
Euceramus praelongus		0.8043	0.2852	2.176	52.9412	.
Polychaete F		0.7588	.	0.759	5.8824	.
Polychaeta	Spionidae	0.7352	0.2731	3.585	88.2353	.
Engraulidae	Anchoa mitchelli	0.6545	0.3761	1.909	29.4118	.
Tetraodontidae	Sphaeroides maculatus	0.5985	.	0.599	5.8824	.
Other Fish Eggs		0.5589	0.5101	3.107	35.2941	.
Dissodactylus mellitae zoea		0.5354	.	0.535	5.8824	.
All Bivalves		0.5187	0.4696	1.926	23.5294	.
Polychaeta	Capitellidae	0.5095	.	0.510	5.8824	.
Acetes carolinae		0.5018	0.2604	0.966	23.5294	.
Polychaeta	Magelonidae	0.4387	0.2277	0.819	17.6471	.
Emerita talpoida		0.4340	0.0960	0.876	41.1765	.
Callianassa spp		0.4299	0.3154	2.312	41.1765	.
Squillid Antizoea		0.3781	0.2785	1.749	35.2941	.
Pinnotheres spp		0.3678	0.1420	1.084	47.0588	.
Ogyrides limicola		0.3660	0.1029	0.645	23.5294	.
Engraulidae fry		0.3505	0.2950	1.823	35.2941	.
Ocypode sp zoea		0.2850	0.2136	0.499	11.7647	.
Libinia spp zoea		0.2677	0.1327	0.964	41.1765	.
Cynoglossidae	Symphurus plagiusa	0.2626	0.2350	0.498	11.7647	.
Mysid		0.2007	.	0.201	5.8824	.
Sciaenidae	Cynocion regalis	0.1962	0.1128	0.527	23.5294	.
Bothidae egg		0.1731	0.0357	0.291	41.1765	.
Penaeid shrimp		0.1652	0.1493	0.613	23.5294	.
Callinectes sp megalopa		0.1473	0.1001	0.643	35.2941	.
Bothidae	Etropus microstomus	0.1384	0.0563	0.246	17.6471	.
Bivalve I		0.1246	0.0335	0.221	23.5294	.
Polychaete A		0.1147	.	0.115	5.8824	.
Blenidae	Hypsoblennius hentzi	0.1141	0.0515	0.196	17.6471	.
Cancer 42 zoea		0.0931	0.0411	0.175	17.6471	.
Triglidae	Prionotus carolinus	0.0927	0.0252	0.142	17.6471	.

TYPE=3 SITE=1

NAME	MNMNABUN	SEMNABUN	MXMNABUN	PCCCJR	PCOVER
Naushonia crangonoides	0.0926419	0.0357297	0.179597	23.5294	.
Squilla (empusa?) protozoea	0.0925687	0.0429369	0.238247	35.2941	.
Lophiidae Lophius americana	0.0814050	.	0.081405	5.8824	.
Lepidopa websteri	0.0776567	0.0353621	0.113910	17.6471	.
Hemiramphidae Hyporhamphus unifasciatus	0.0632125	.	0.063212	5.8824	.
Gobiesocidae Gobiosox strumosus	0.0596875	0.0410829	0.141397	17.6471	.
Bivalve B	0.0589587	0.0451312	0.104090	11.7647	.
Alphaeus normanni	0.0587662	0.0515987	0.110365	11.7647	.
Polychaeta Autolytus spp	0.0543961	0.0193308	0.144207	41.1765	.
Libinia emarginata Megalopa	0.0522100	0.0442175	0.096427	11.7647	.
Nemertine Pilidium larva	0.0520300	0.0371328	0.125347	17.6471	.
Sciaenidae spp	0.0460675	.	0.048067	5.8824	.
Hippolyte pleuracantha	0.0436737	0.0189564	0.096062	23.5294	.
Polychaeta Nereidae	0.0427354	0.0272332	0.205362	41.1765	.
Gobiidae Gobiosoma bosci	0.0411019	0.0123793	0.078067	23.5294	.
Bothidae Scophthalmus aquasus	0.0359037	0.0180447	0.082747	23.5294	.
Atherinidae Menidia menidia	0.0286675	.	0.028667	5.8824	.
DUMMY	0.0286675	.	0.028667	5.8824	.
Persephone punctata	0.0276575	.	0.027657	5.8824	.
Megalopa A	0.0211625	0.0094412	0.040040	17.6471	.
Ammodytidae Ammodytes hexapterus	0.0162112	0.0118537	0.028065	11.7647	.
Cancer sp megalopa	0.0160308	0.0087916	0.032977	17.6471	.
Anthrinidae Membras martinica	0.0152687	0.0054737	0.020742	11.7647	.
Portunid crab	0.0139275	.	0.013927	5.8824	.
Portunus spinicarpus Megalopa	0.0128737	0.0012562	0.014130	11.7647	.
Ophidae Rissola marginata	0.0071675	.	0.007167	5.8824	.
Libinia dubia Megalopa	0.0056750	.	0.005675	5.8824	.
Palaemonidae palaemoninae	0.0055375	.	0.005537	5.8824	.

TYPE=3 SITE=10

NAME	MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Engraulidae egg	108.846	67.9808	489.793	50.000	42.8571
Crangon septemspinosa	25.263	11.2329	122.676	92.857	28.5714
Callinectes sp zoea	14.869	5.1416	33.413	42.857	21.4286
Larvacea	11.633	5.7289	56.870	71.429	21.4286
Upogebia affinis	7.739	2.8972	17.760	35.714	14.2857
Uca spp	7.382	4.4675	26.211	42.857	14.2857
Sciaenidae egg	4.509	2.6704	22.600	57.143	7.1429
Mysidopsis bigelowi	3.169	2.6416	18.792	50.000	7.1429
Cancer irroratus zoea	3.127	1.9231	17.418	71.429	14.2857
Callianassa spp	3.081	2.4530	12.822	35.714	7.1429
Neomysis americana	3.048	2.1823	17.842	57.143	7.1429
Pagurid Crabs	3.035	1.2769	12.638	85.714	7.1429
All Fisheggs	2.663	1.6104	22.798	100.000	7.1429
Xanthid Crabs	2.590	1.4960	11.727	57.143	7.1429
Gastropods	2.241	0.6109	4.124	50.000	.
Polychaeta Spionidae	2.041	0.5980	7.139	85.714	.
Engraulidae fry	1.862	1.4648	4.755	21.429	.
Ovalipes quadulpensis zoea	1.738	1.1829	7.617	42.857	.
Phoronida	1.604	1.4436	8.817	42.857	.
Pinnixa spp	1.370	0.7182	6.482	64.286	.
Hippolyte pleuracantha	1.322	1.2308	2.553	14.286	.
Bowmaniella dissimilis	1.028	0.8386	5.171	42.857	.
Pinnotheres spp	1.022	0.6234	2.759	28.571	.
Polychaeta Magelonidae	0.981	0.8431	2.660	21.429	.
All Bivalves	0.886	0.2578	2.121	57.143	.
Squillid Antizoea	0.760	0.7263	2.938	28.571	.
Other Bivalves	0.758	0.2022	1.286	57.143	.
Emerita talpoida	0.683	0.4631	2.980	42.857	.
Euceramus praelongus	0.681	0.3391	2.588	50.000	.
Bivalve I	0.555	0.4795	3.425	50.000	.
Engraulidae Anchoa mitchelli	0.541	0.4711	2.417	35.714	.
Unidentifiable fish	0.520	.	0.520	7.143	.
Spisula solidissima	0.481	0.3893	0.871	14.286	.
Gobiidae Gobiosoma bosci	0.449	0.1596	0.609	14.286	.
Polychaeta Terebellidae spp	0.428	0.1669	0.764	28.571	.
Callinectes sp megalopa	0.355	.	0.355	7.143	.
Sciaenidae Cynocion regalis	0.342	0.2172	0.776	21.429	.
Pinnotheres zoea	0.315	0.2215	0.537	14.286	.
Lucifer Faxoni	0.303	0.1674	0.951	35.714	.
Metamysidopsis	0.273	.	0.273	7.143	.
Palaemonetes spp	0.273	0.0850	0.782	57.143	.
Polychaeta Nereidae	0.252	0.0961	0.828	64.286	.
Polychaeta Autolytus spp	0.247	0.1247	0.849	42.857	.
Triglidae Prionotus carolinus	0.242	.	0.242	7.143	.
Nemertine Pilidium larva	0.189	.	0.189	7.143	.
Naushonia crangonoides	0.162	0.0615	0.305	28.571	.
Ocypode sp zoea	0.129	0.1222	0.251	14.286	.
Bothidae egg	0.118	0.0306	0.246	64.286	.
Polychaeta Trochophores & Nectochaetes	0.113	0.0839	0.291	21.429	.
Acetes carolinae	0.104	0.0896	0.194	14.286	.
Polychaeta Capitellidae	0.094	.	0.094	7.143	.
Polychaete A	0.081	.	0.081	7.143	.
Polychaete F	0.078	.	0.078	7.143	.
Pomatumidae Pomatumus saltatrix	0.071	.	0.071	7.143	.

TYPE=3 SITE=10

NAME		MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Penaeid shrimp		0.0640575	0.0062425	0.070300	14.2857	.
Bothidae	Scophthalmus aquasus	0.0632312	0.0238463	0.087077	14.2857	.
Bivalve B		0.0604400	.	0.060440	7.1429	.
Cynoglossidae	Symphurus plagiusa	0.0578150	.	0.057815	7.1429	.
Cancer #2 zoea		0.0560800	.	0.056080	7.1429	.
Ogyrides limicola		0.0513275	0.0441025	0.095430	14.2857	.
Ammodytidae	Ammodytes hexapterus	0.0505887	0.0466112	0.097200	14.2857	.
Other Fish eggs		0.0504617	0.0426503	0.135635	21.4286	.
Libinia spp zoea		0.0458725	0.0206872	0.099690	28.5714	.
Gobiesocidae	Gobiosox strumosus	0.0389467	0.0194370	0.070080	21.4286	.
Blenildae	Hypsoblennius hentzi	0.0364750	0.0105821	0.063940	35.7143	.
Squilla (empusa?) protozoea		0.0363600	.	0.036360	7.1429	.
Dissodactylus mellitae zoea		0.0298075	0.0061250	0.035932	14.2857	.
Libinia dubia Megalopa		0.0259233	0.0091625	0.036585	21.4286	.
Atherinidae	Menidia menidia	0.0162825	0.0015725	0.017855	14.2857	.
Shrimp 6		0.0138975	.	0.013897	7.1429	.
Megalopa A		0.0117125	.	0.011712	7.1429	.
Syngnathidae	Syngnathus fuscus	0.0079350	.	0.007935	7.1429	.
Syngnathidae	Hippocampus eratus	0.0059925	.	0.005992	7.1429	.
Clupeidae	Brevoortia tyrannus	0.0055875	.	0.005587	7.1429	.
Ophildae	Rissola marginata	0.0035825	.	0.003582	7.1429	.

TYPE=3 SITE=11

NAME		MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Callinectes sp zoea		88.7420	58.6161	375.352	42.857	28.5714
Engraulidae egg		79.8056	59.9075	497.510	57.143	35.7143
Larvacea		58.3390	29.3606	310.220	71.429	50.0000
Crangon septemspinosa		15.1371	7.4267	70.892	85.714	28.5714
All Fisheggs		6.7344	3.6773	48.022	100.000	14.2857
Sciaenidae egg		6.4305	4.6639	48.009	71.429	7.1429
Other Fish Eggs		5.4571	3.8404	20.428	35.714	7.1429
Uca spp		4.1465	2.5141	15.371	50.000	14.2857
Engraulidae fry		3.2952	1.8028	6.485	21.429	.
Mysidopsis bigelowi		3.0420	2.9321	17.701	42.857	7.1429
Neomysis americana		3.0059	1.7962	8.108	35.714	.
Gastropods		2.8502	1.8640	19.194	71.429	7.1429
Cancer irroratus zoea		2.6285	1.1821	8.694	57.143	.
Ovalipes quadulpensis zoea		2.1116	1.1048	8.678	57.143	.
Lucifer Faxoni		1.9304	0.7902	5.243	42.857	.
Pagurid Crabs		1.3216	0.5716	6.187	71.429	.
Xanthid Crabs		1.1728	0.5553	3.755	50.000	.
Anthrinidae	Membras martinica	1.1007	.	1.101	7.143	.
Triglidae	*Prionotus carolinus*	1.0378	0.8298	1.868	14.286	.
Upogebia affinis		0.9400	0.5131	3.730	50.000	.
Phoronida		0.9163	0.8277	3.396	28.571	.
Emerita talpoida		0.7732	0.4116	2.785	42.857	.
Bowmaniella dissimilis		0.7457	0.0325	0.778	14.286	.
Squillid Antizoea		0.5851	0.2840	1.379	28.571	.
Polychaeta	Terebellidae spp	0.5843	0.3110	1.488	28.571	.
Unidentifiable fish		0.5795	.	0.579	7.143	.
Pinnixa spp		0.5233	0.3299	2.162	42.857	.
Nemertine Pilidium larva		0.4871	0.2646	0.937	21.429	.
Bothidae egg		0.3844	0.2639	1.906	50.000	.
Polychaeta	Spionidae	0.3812	0.0998	0.966	78.571	.
Polychaeta	Trochophores & Nectochaetes	0.3570	0.3310	1.019	21.429	.
Sciaenidae	Cynocion regalis	0.3367	0.1505	0.637	21.429	.
Euceramus praelongus		0.3090	0.1980	1.271	42.857	.
Squilla (empusa?) protozoea		0.3057	0.0499	0.356	14.286	.
Bivalve I		0.2961	.	0.296	7.143	.
Bothidae	Etropus microstomus	0.2754	0.1323	0.408	14.286	.
Engraulidae	Anchoa mitchelli	0.2536	0.2233	0.700	21.429	.
Sciaenidae	Leiostomus xanthurus	0.2478	.	0.248	7.143	.
Megalopa A		0.2325	0.2090	0.441	14.286	.
Callianassa spp		0.2254	0.1108	0.415	21.429	.
Pinnotheres spp		0.2194	0.1061	0.587	35.714	.
All Bivalves		0.2030	0.1182	0.556	28.571	.
Other Bivalves		0.2007	0.1192	0.556	28.571	.
Cynoglossidae	Symphurus plagiusa	0.1960	0.1175	0.314	14.286	.
Atherinidae	Menidia menidia	0.1955	.	0.196	7.143	.
Portunus sp zoea		0.1797	.	0.180	7.143	.
Cancer sp megalopa		0.1756	0.1047	0.375	21.429	.
Penaeid shrimp		0.1709	0.1565	0.640	28.571	.
Callinectes sp megalopa		0.1687	0.0038	0.172	14.286	.
Lepidopa *websteri*		0.1624	0.1491	0.312	14.286	.
Libinia dubia Megalopa		0.1332	0.1250	0.258	14.286	.
Palaemonetes spp		0.1327	0.0574	0.348	50.000	.
Cancer #2 zoea		0.1185	0.1055	0.224	14.286	.
Polychaeta	Nereidae	0.1015	0.0474	0.232	28.571	.

TYPE=3 SITE=11

NAME	MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Dissodactylus mellitae zoea	0.0992725	.	0.099272	7.1429	.
Bothidae Paralichthys dentatus	0.0975350	.	0.097535	7.1429	.
Acetes carolinae	0.0860625	.	0.086062	7.1429	.
Hippolyte pleuracantha	0.0770025	.	0.077002	7.1429	.
Naushonia crangonoides	0.0624475	0.0108775	0.073325	14.2857	.
Ammodytidae Ammodytes hexapterus	0.0482925	.	0.048292	7.1429	.
Gobiesucidae Gobiosox strumosus	0.0482925	.	0.048292	7.1429	.
Portunus spinicarpus Megalopa	0.0447800	.	0.044780	7.1429	.
Ophiidae Rissola marginata	0.0433412	0.0199462	0.063287	14.2857	.
Bothidae Scophthalmus aquasus	0.0360057	0.0194718	0.148312	50.0000	.
Libinia emarginata Megalopa	0.0350950	.	0.035095	7.1429	.
Megalopa 8	0.0318525	.	0.031852	7.1429	.
Stromateidae Peprilus triacanthus	0.0313300	0.0223525	0.053682	14.2857	.
Lophiidae Lophius americana	0.0310225	0.0215350	0.052557	14.2857	.
Pinnotheres zoea	0.0309275	.	0.030927	7.1429	.
Polychaeta Tomopteris spp	0.0248100	.	0.024810	7.1429	.
Polychaeta Autolytus spp	0.0193765	0.0072154	0.039292	35.7143	.
Libinia spp zoea	0.0165925	0.0032625	0.019855	14.2857	.
Blenliidae Hypsoblennius hentzi	0.0140900	0.0038982	0.019207	21.4286	.
Fish - unknown	0.0099275	.	0.009927	7.1429	.
Anadara spp	0.0091800	.	0.009180	7.1429	.
Cancellaria reticulata	0.0089800	.	0.008980	7.1429	.

TYPE=3 SITE=12

NAME	MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Engraulidae egg	23.1868	8.2268	67.5314	57.1429	35.7143
Other Fish Eggs	17.6375	15.0545	62.4404	28.5714	7.1429
Larvacea	9.2943	5.6329	52.4468	78.5714	14.2857
All Fisheggs	6.8622	5.7386	63.6410	78.5714	7.1429
Callinectes sp zoea	4.7325	2.2843	14.1584	50.0000	14.2857
Callianassa spp	4.4489	4.3634	8.8123	14.2857	.
Pagurid Crabs	4.3906	3.3856	17.5716	35.7143	7.1429
Polychaete F	3.9638	.	3.9638	7.1429	.
Euceramus praelongus	2.8385	2.4328	7.6813	21.4286	.
Crangon septemspinosa	2.2786	0.8478	9.3598	85.7143	.
Libinia spp zoea	1.4358	1.4078	2.8435	14.2857	.
Engraulidae Anchoa mitchelli	1.3021	0.5827	2.0166	21.4286	.
Neomysis americana	1.1719	0.4691	1.8256	21.4286	.
Gastropods	1.1137	1.0046	5.1253	35.7143	.
Pinnixa spp	1.0112	0.8358	5.9564	50.0000	.
Emerita talpoida	0.8726	0.6954	3.6422	35.7143	.
Polychaeta Capitellidae	0.7534	.	0.7534	7.1429	.
Upogebia affinis	0.7060	0.3038	1.8835	35.7143	.
Boumaniella dissimilis	0.6611	0.4146	1.4344	21.4286	.
Polychaeta Spionidae	0.6171	0.3329	2.6532	57.1429	.
Sciaenidae egg	0.6037	0.1919	1.3346	57.1429	.
Ammodytidae Ammodytes hexapterus	0.4951	.	0.4951	7.1429	.
Squillid Antizoea	0.4830	0.2849	1.1408	28.5714	.
Polychaeta Magelonidae	0.4771	0.4690	0.9461	14.2857	.
Engraulidae fry	0.3564	0.2482	0.8357	21.4286	.
Polychaeta Terebellidae spp	0.3438	0.2816	1.1865	28.5714	.
Bivalve I	0.3047	.	0.3047	7.1429	.
Polychaete A	0.2520	.	0.2520	7.1429	.
Xanthid Crabs	0.2512	0.1276	0.9663	50.0000	.
Cancer irroratus zoea	0.2108	0.1148	0.6498	35.7143	.
Mysid	0.1915	.	0.1915	7.1429	.
Lucifer Faxoni	0.1776	0.1056	0.6607	42.8571	.
Phoronida	0.1706	0.0894	0.4342	28.5714	.
Mysidopsis bigelowi	0.1600	0.0836	0.4892	42.8571	.
Pinnotheres spp	0.1323	.	0.1323	7.1429	.
Uca spp	0.1186	0.0682	0.5769	57.1429	.
Ovalipes quadulpensis zoea	0.1128	0.0570	0.2699	35.7143	.
Other Bivalves	0.0589	0.0284	0.1103	21.4286	.
All Bivalves	0.0589	0.0284	0.1103	21.4286	.
Gobiesucidae Gobiosox strumosus	0.0560	.	0.0560	7.1429	.
Polychaeta Nereidae	0.0467	0.0422	0.0890	14.2857	.
Callinectes sp megalopa	0.0390	0.0191	0.0582	14.2857	.
Bothidae Etropus microstomus	0.0361	0.0173	0.0535	14.2857	.
Dissodactylus mellitae zoea	0.0338	.	0.0338	7.1429	.
Palaemonetes spp	0.0270	0.0064	0.0640	57.1429	.
Bothidae egg	0.0261	0.0088	0.0467	28.5714	.
Megalopa A	0.0242	0.0196	0.0438	14.2857	.
Polychaeta Trochophores & Nectochaetes	0.0240	.	0.0240	7.1429	.
Ogyrides limicola	0.0194	.	0.0194	7.1429	.
Sciaenidae Cynocion regalis	0.0194	0.0074	0.0268	14.2857	.
Nemertine Pilidium larva	0.0187	.	0.0187	7.1429	.
Blenniidae Hypsoblennius hentzi	0.0174	0.0041	0.0247	21.4286	.
Polychaeta Autolytus spp	0.0169	0.0001	0.0171	14.2857	.
Bothidae Scophthalmus aquosus	0.0154	.	0.0154	7.1429	.

TYPE=3 SITE=12

NAME		MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Anthrinidae	Membras martinica	0.0148775	.	0.0148775	7.1429	.
Hippolyte pleuracantha		0.0133375	0.00254030	0.0183575	21.4286	.
Squilla lempusa?1 protozoea		0.0108425	0.00530000	0.0161425	14.2857	.
Lepidopa websteri		0.0101500	.	0.0101500	7.1429	.
Atherinidae	Menidia menidia	0.0072475	0.00220750	0.0094550	14.2857	.
Gobiidae	Gobiosoma bosci	0.0050400	.	0.0050400	7.1429	.
Penaeid shrimp		0.0046675	.	0.0046675	7.1429	.

TYPE=3 SITE=13

NAME		MNMNABUN	SEMNABUN	MXMNABUN	PCOCUR	PCOVER
Engraulidae egg		45.8681	20.9279	143.378	46.1538	30.7692
Crangon septemspinosa		12.7363	5.3654	60.756	92.3077	30.7692
Larvacea		8.0376	5.8188	42.527	53.8462	7.6923
Pagurid Crabs		6.4406	6.1266	43.186	53.8462	7.6923
Callinectes sp zoea		4.8483	1.8142	11.486	46.1538	7.6923
Engraulidae fry		2.8724	1.3555	4.228	15.3846	.
Gastropods		2.6554	1.7295	12.813	53.8462	7.6923
Neomysis americana		2.2937	1.7713	9.322	38.4615	.
Euceramus praelongus		1.5486	1.3860	9.832	53.8462	.
Uca spp		1.5320	1.3031	8.041	46.1538	.
Squillid Antizoea		1.3869	1.1228	3.611	23.0769	.
Xanthid Crabs		1.2764	0.6059	4.185	61.5385	.
Sciaenidae egg		1.2734	0.6395	4.760	53.8462	.
Engraulidae	Anchoa mitchelli	1.1979	1.1170	3.430	23.0769	.
Polychaeta	Terebellidae spp	1.1244	0.5926	2.177	23.0769	.
Other Bivalves		1.0219	0.9551	3.887	30.7692	.
All Bivalves		1.0219	0.9551	3.887	30.7692	.
Emerita talpoida		0.9123	0.5749	3.604	46.1538	.
Pinnixa spp		0.8967	0.4583	3.376	53.8462	.
Polychaeta	Spionidae	0.8593	0.3664	2.587	53.8462	.
Bivalve I		0.8367	0.4317	1.268	15.3846	.
Upogebia affinis		0.8026	0.4361	3.445	61.5385	.
Bowmaniella dissimilis		0.7874	0.3838	1.171	15.3846	.
All Fisheggs		0.7701	0.4033	4.760	92.3077	.
Ovalipes quadulpensis zoea		0.7246	0.5651	3.520	46.1538	.
Polychaeta	Magelonidae	0.4710	0.3602	0.831	15.3846	.
Pinnotheres spp		0.3767	0.2224	1.334	53.8462	.
Lucifer Faxoni		0.3500	0.1756	1.037	38.4615	.
Naushonia crangonoides		0.3158	0.2999	0.616	15.3846	.
Callianassa spp		0.3124	0.1684	0.899	46.1538	.
Mysidopsis bigelowi		0.2975	0.1221	0.582	30.7692	.
Gobiidae	Gobiosoma bosci	0.2585	0.2464	0.505	15.3846	.
Sciaenidae	Cynocion regalis	0.2541	0.2190	0.473	15.3846	.
Polychaeta	Autolytus spp	0.2527	0.1984	1.229	46.1538	.
Palaemonetes spp		0.2369	0.0948	0.730	61.5385	.
Cancer irroratus zoea		0.2307	0.1063	0.679	53.8462	.
Ammodytidae	Ammodytes hexapterus	0.1889	0.1381	0.327	15.3846	.
Libinia spp zoea		0.1523	0.1221	0.396	23.0769	.
Polychaeta	Trochophores & Nectochaetes	0.1380	0.0981	0.236	15.3846	.
Polychaeta	Nereidae	0.0925	0.0573	0.150	15.3846	.
Phoronida		0.0758	0.0166	0.111	30.7692	.
Bothidae egg		0.0720	0.0305	0.161	30.7692	.
Penaeid shrimp		0.0690	0.0604	0.129	15.3846	.
Nemertine Pilidium larva		0.0595	.	0.059	7.6923	.
Polychaeta	Capitellidae	0.0585	0.0292	0.088	15.3846	.
Ogyrides limicola		0.0519	.	0.052	7.6923	.
Pinnotheres zoea		0.0511	.	0.051	7.6923	.
Blenniidae	Hypsoblennius hentzi	0.0504	0.0240	0.146	38.4615	.
Lepidopa websteri		0.0399	0.0135	0.053	15.3846	.
Ocypode sp zoea		0.0284	.	0.028	7.6923	.
Bothidae	Scophthalmus aquasus	0.0269	.	0.027	7.6923	.
Dissodactylus mellitae zoea		0.0256	0.0189	0.045	15.3846	.
Lophiidae	Lophius americana	0.0239	.	0.024	7.6923	.
Acetes carolinae		0.0236	0.0044	0.028	15.3846	.

TYPE=3 SITE=L3

NAME		MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Polycnaeta	Tomopteris spp	0.0206625	.	0.0206625	7.6923	.
Clupeidae	Brevoortia tyrannus	0.0198975	.	0.0198975	7.6923	.
Bothidae	Etropus microstomus	0.0192000	.	0.0192000	7.6923	.
Atherinidae	Menidia menidia	0.0162550	0.0051003o	0.0276150	30.7692	.
Libinia dubia	Megalopa	0.0155925	.	0.0155925	7.6923	.
Other Fish Eggs		0.0132500	0.00076571	0.0142850	23.0769	.
Alphaeus heterochaelis		0.0130800	.	0.0130800	7.6923	.
Palaemonidae	palaemoninae	0.0093425	.	0.0093425	7.6923	.
Callinectes sp	megalopa	0.0083962	0.00330875	0.0117050	15.3846	.
Metamysidopsis		0.0082500	.	0.0082500	7.6923	.
Syngnathidae	Syngnathus fuscus	0.0071187	0.00129125	0.0084100	15.3846	.
Squilla (empusa?)	protozoea	0.0064050	.	0.0064050	7.6923	.
Hippolyte pleuracantha		0.0047475	.	0.0047475	7.6923	.

TYPE=3 SITE=20

NAME	MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Engraulidae egg	74.4136	34.7401	279.222	88.889	66.6667
Callinectes sp zoea	42.3037	16.8642	105.736	77.778	55.5556
Crangon septemspinosa	29.9550	15.9749	125.610	100.000	44.4444
Larvacea	26.6733	9.7563	64.351	88.889	44.4444
All Fisheggs	11.2565	3.8662	27.281	100.000	44.4444
Gastropods	10.3100	7.6762	55.311	77.778	22.2222
Nemertine Pilidium larva	7.8738	.	7.874	11.111	.
Sciaenidae egg	7.7857	3.0821	26.473	88.889	22.2222
Other Fish Eggs	7.7156	3.8199	19.335	55.556	22.2222
Pagurid Crabs	5.3801	3.4436	31.887	100.000	11.1111
All Bivalves	4.3939	4.1606	12.711	33.333	11.1111
Other Bivalves	4.3592	4.1771	12.711	33.333	11.1111
Bivalve I	4.2258	.	4.226	11.111	.
Engraulidae fry	3.8799	2.1764	7.984	44.444	.
Ovalipes zoea	3.3955	.	3.395	11.111	.
Lucifer Faxoni	2.9804	2.6469	10.912	44.444	11.1111
Upogebia affinis	2.8220	1.3290	7.797	55.556	.
Polychaeta Terebellidae spp	2.2059	1.7960	7.583	44.444	.
Uca spp	2.0310	1.1805	7.720	66.667	.
Cancer irroratus zoea	1.9533	1.0929	5.101	44.444	.
Euceramus praelongus	1.8432	1.3017	5.615	44.444	.
Ovalipes quadulpensis zoea	1.7837	1.0753	7.775	77.778	.
Libinia spp zoea	1.7080	0.2795	1.987	22.222	.
Xanthid Crabs	1.5327	0.6204	3.449	55.556	.
Squillid Antizoea	1.1533	0.8428	4.442	55.556	.
Mysidopsis bigelowi	1.1043	0.9924	4.078	44.444	.
Mysid	0.9927	.	0.993	11.111	.
Polychaeta Spionidae	0.9279	0.3272	2.718	100.000	.
Bowmaniella dissimilis	0.7282	0.5705	1.868	33.333	.
Pinnixa spp	0.6835	0.2970	1.386	44.444	.
Pinnotheres spp	0.5457	0.0924	0.652	33.333	.
Libinia dubia Megalopa	0.5028	.	0.503	11.111	.
Emerita talpoida	0.4907	0.2040	1.405	66.667	.
Dissodactylus mellitae zoea	0.4849	.	0.485	11.111	.
Phoronida	0.4553	0.3850	1.994	55.556	.
Polychaeta Nereidae	0.4450	0.4217	0.867	22.222	.
Ophiidae Rissola marginata	0.4275	.	0.428	11.111	.
Sciaenidae Cynocion regalis	0.4020	0.3165	0.719	22.222	.
Triglidae Prionotus carolinus	0.3785	.	0.379	11.111	.
Callianassa spp	0.3559	0.2867	0.643	22.222	.
Engraulidae Anchoa mitchelli	0.3063	0.1424	0.686	55.556	.
Penaeid shrimp	0.2927	0.2109	0.919	44.444	.
Palaemonetes spp	0.2910	0.0846	0.569	66.667	.
Naushonia crangonoides	0.2848	0.2760	0.561	22.222	.
Callinectes sp megalopa	0.2088	0.0520	0.261	22.222	.
Acetes carolinae	0.2068	0.1952	0.402	22.222	.
Bothidae Etropus microstomus	0.1872	.	0.187	11.111	.
Neomysis americana	0.1803	0.0654	0.246	22.222	.
Shrimp b	0.1759	.	0.176	11.111	.
Ogyrides limicola	0.1640	.	0.164	11.111	.
Blenniidae Hypsoblennius hentzi	0.1315	0.0480	0.244	55.556	.
Polychaeta Trochophores & Nectochaetes	0.1311	0.0070	0.138	22.222	.
Cancer sp megalopa	0.1305	0.0746	0.205	22.222	.
Polychaete F	0.1193	.	0.119	11.111	.

TYPE=3 SITE=20

NAME		MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Bothidae egg		0.111182	0.0615627	0.264700	44.4444	.
Bivalve B		0.104045	.	0.104045	11.1111	.
Polycnaeta	Capitellidae	0.103295	.	0.103295	11.1111	.
Polycnaeta	Magelonidae	0.098472	0.0787075	0.177180	22.2222	.
Bothidae	Scophthalmus aquasus	0.079257	0.0435918	0.162632	33.3333	.
Portunus spinicarpus Megalopa		0.070215	0.0060500	0.076265	22.2222	.
Polycnaete A		0.057270	.	0.057270	11.1111	.
Cynoglossidae	Symphurus plagiusa	0.056985	0.0282625	0.085247	22.2222	.
Squilla (empusa?) protozoea		0.052104	0.0141305	0.075720	33.3333	.
Pinnotheres zoea		0.037435	0.0317175	0.069152	22.2222	.
Polycnaeta	Autolytus spp	0.037081	0.0314677	0.100005	33.3333	.
Megalopa A		0.027297	.	0.027297	11.1111	.
Clupeidae	Brevoortia tyrannus	0.022512	.	0.022512	11.1111	.
Lepidopa websteri		0.014988	0.0041037	0.020325	33.3333	.
Ocypode sp zoea		0.010805	.	0.010805	11.1111	.
Polycnaeta	Tomopteris spp	0.008580	.	0.008580	11.1111	.
Lophidae	Lophius americana	0.008385	.	0.008385	11.1111	.
Alpheus heterochaelis		0.007455	.	0.007455	11.1111	.
Syngnathidae	Syngnathus fuscus	0.007455	.	0.007455	11.1111	.
Ammodytidae	Ammodytes hexapterus	0.007104	0.0014763	0.008580	22.2222	.
Anthrinidae	Membras martinica	0.006865	.	0.006865	11.1111	.
Fish - unknown		0.005627	.	0.005627	11.1111	.

TYPE=3 SITE=21

NAME	MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Larvacea	81.6600	49.4779	364.588	100.000	50.0000
Callinectes sp zoea	65.4075	31.6971	182.643	75.000	50.0000
Engraulidae egg	56.5384	23.0483	166.729	87.500	62.5000
Crangon septemspinosa	26.4070	14.1104	90.284	75.000	37.5000
Cancer irroratus zoea	21.2674	20.2822	122.669	75.000	12.5000
Gastropods	7.7802	2.9869	17.416	75.000	25.0000
All Fisheggs	7.6524	2.6207	18.183	100.000	37.5000
Sciaenidae egg	6.8100	2.6595	18.038	100.000	37.5000
Sesarma sp zoea	6.0664	.	6.066	12.500	.
Engraulidae fry	5.5183	3.3394	14.484	50.000	12.5000
Nemertine Pilidium larva	4.0252	.	4.025	12.500	.
Uca spp	3.9213	2.7926	17.409	75.000	12.5000
Pagurid Crabs	2.5312	1.1257	8.874	87.500	.
Other Fish Eggs	2.0525	0.7739	3.506	37.500	.
Ovalipes quadulpensis zoea	2.0438	1.0675	7.044	75.000	.
Lucifer Faxoni	1.9216	1.0845	4.631	50.000	.
Polychaeta Spionidae	1.1245	0.4903	4.275	100.000	.
Euceramus praelongus	1.0922	0.7356	3.906	62.500	.
Xanthid Crabs	0.9173	0.6601	4.203	75.000	.
Upogebia affinis	0.6750	0.2441	1.641	75.000	.
Polychaeta Terebellidae spp	0.5944	0.2337	1.197	62.500	.
Bowmaniella dissimilis	0.5352	0.2388	0.838	37.500	.
Polychaete F	0.5211	.	0.521	12.500	.
Sciaenidae Cynocion regalis	0.4736	0.2371	0.711	25.000	.
Squillid Antizoea	0.4472	0.2493	1.192	50.000	.
Polychaeta Trochophores & Nectochaetes	0.4389	0.4298	1.298	37.500	.
Emerita talpoida	0.3960	0.1965	1.300	75.000	.
Neomysis americana	0.3875	.	0.388	12.500	.
Bothidae Paralichthys dentatus	0.3782	.	0.378	12.500	.
Squilla (empusa?) protozoea	0.3620	0.2598	1.380	62.500	.
Engraulidae Anchoa mitchelli	0.3577	0.2872	1.214	50.000	.
Bothidae Etropus microstomus	0.3041	.	0.304	12.500	.
Pinnixa spp	0.3035	0.1322	0.789	62.500	.
Lepidopa websteri	0.3025	0.1574	0.460	25.000	.
Phoronida	0.2759	0.2191	0.714	37.500	.
Palaemonidae palaemoninae	0.2634	.	0.263	12.500	.
Hippolyte pleuracantha	0.2537	.	0.254	12.500	.
Triglidae Prionotus carolinus	0.2426	0.0159	0.258	25.000	.
Palaemonetes spp	0.2358	0.0259	0.284	62.500	.
Bothidae Scophthalmus aquasus	0.1987	0.0707	0.422	62.500	.
Bothidae egg	0.1939	0.1044	0.394	37.500	.
Mysidopsis bigelowi	0.1652	0.0897	0.421	50.000	.
Gobiesuciuae Gobiosox strumosus	0.1652	.	0.165	12.500	.
Atherinidae Menidia menidia	0.1590	.	0.159	12.500	.
Libinia spp zoea	0.1225	0.0729	0.268	37.500	.
Cancer sp megalopa	0.1223	.	0.122	12.500	.
Callinectes sp megalopa	0.1147	0.1071	0.222	25.000	.
Ovalipes quadulpensis megalopa	0.1014	.	0.101	12.500	.
Penaeid shrimp	0.0957	0.0241	0.168	50.000	.
Callianassa spp	0.0933	0.0766	0.246	37.500	.
Polychaeta Nereidae	0.0867	0.0282	0.149	50.000	.
Naushonia crangonoides	0.0824	0.0101	0.093	25.000	.
Lophiidae Lophius americana	0.0707	0.0613	0.132	25.000	.
Other Bivalves	0.0693	0.0612	0.131	25.000	.

TYPE=3 SITE=21

NAME		MNMNABUN	SEMNABUN	MXMNABUN	POCCJR	PCOVER
All Bivalves		0.0606483	0.0363962	0.130510	37.5000	.
Stromateidae	Peprilus triacanthus	0.0454000	.	0.045400	12.5000	.
Bivalve B		0.0434250	.	0.043425	12.5000	.
Polychaeta	Tomopteris spp	0.0327525	.	0.032752	12.5000	.
Bivalve I		0.0322792	0.0101092	0.043425	37.5000	.
Megalopa A		0.0168125	.	0.016812	12.5000	.
Portunus spinicarpus Megalopa		0.0096350	.	0.009635	12.5000	.
Sciaenidae	Leiostomus xanthurus	0.0090275	.	0.009027	12.5000	.
Libinia dubia Megalopa		0.0084475	.	0.008447	12.5000	.
Polychaeta	Autolytus spp	0.0069512	0.0024462	0.009397	25.0000	.
Barnacle nauplius		0.0059450	.	0.005945	12.5000	.
Ophiidae	Rissola marginata	0.0056950	.	0.005695	12.5000	.

TYPE=3 SITE=22

NAME	MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Engraulidae egg	135.024	59.9406	501.720	100.000	77.7778
Larvacea	67.521	39.7267	351.255	100.000	44.4444
Callinectes sp zoea	25.103	10.1584	77.773	77.778	55.5556
All Fisheggs	9.671	5.1378	45.347	100.000	22.2222
Sciaenidae egg	9.336	5.1502	45.111	100.000	22.2222
Crangon septemspinosa	9.112	4.0716	31.341	88.889	22.2222
Engraulidae fry	4.236	2.8955	9.827	33.333	.
Lucifer Faxoni	3.988	3.8817	15.633	44.444	11.1111
Cancer irroratus zoea	3.756	2.3311	10.823	55.556	11.1111
Pagurid Crabs	2.636	0.9842	5.501	77.778	.
Sesarma sp zoea	1.669	.	1.669	11.111	.
Ovalipes quadulpensis zoea	1.415	0.6592	4.987	77.778	.
Nemertine Pilidium larva	1.380	.	1.380	11.111	.
Gastropods	1.223	0.6314	4.727	77.778	.
Uca spp	0.883	0.3434	2.687	88.889	.
Bowmaniella dissimilis	0.839	0.4904	1.329	22.222	.
Polychaeta Terebellidae spp	0.807	0.2320	1.269	33.333	.
All Bivalves	0.716	0.6970	2.110	33.333	.
Upogebia affinis	0.705	0.3953	2.444	66.667	.
Other Fish Eggs	0.673	0.4651	1.981	44.444	.
Bivalve B	0.667	0.6333	1.301	22.222	.
Gyyrides limicola	0.650	.	0.650	11.111	.
Squilla (empusa?) protozoea	0.543	0.2400	0.783	22.222	.
Engraulidae Anchoa mitchelli	0.511	0.4844	0.996	22.222	.
Xanthid Crabs	0.485	0.3638	2.291	66.667	.
Pinnotheres spp	0.419	0.1947	0.635	33.333	.
Other Bivalves	0.406	0.4026	0.809	22.222	.
Bothidae Paralichthys dentatus	0.387	.	0.387	11.111	.
Penaeid shrimp	0.385	0.3430	0.729	22.222	.
Sciaenidae Cynocion regalis	0.363	0.2959	0.659	22.222	.
Emerita talpoida	0.335	0.1014	0.695	66.667	.
Mysidopsis bigelowi	0.314	.	0.314	11.111	.
Polychaeta Spionidae	0.312	0.1219	1.103	100.000	.
Triglidae Prionotus carolinus	0.280	0.0719	0.352	22.222	.
Callinectes sp megalopa	0.249	0.2009	0.648	33.333	.
Euceramus praelongus	0.243	0.1697	0.751	44.444	.
Squillid Antizoea	0.228	0.1394	0.776	55.556	.
Naushonia crangonoides	0.220	0.1994	0.419	22.222	.
Megalopa A	0.150	0.1107	0.260	22.222	.
Polychaeta Syllides verrilli	0.144	.	0.144	11.111	.
Libinia spp zoea	0.141	0.0717	0.267	33.333	.
Ophiidae Rissola marginata	0.120	.	0.120	11.111	.
Callianassa spp	0.116	0.0883	0.386	44.444	.
Bothidae egg	0.109	0.0673	0.236	33.333	.
Blenlidae Hypsoblennius hentzi	0.093	0.0752	0.244	33.333	.
Hippolyte pleuracantha	0.092	.	0.092	11.111	.
Neomysis americana	0.085	0.0578	0.257	44.444	.
Phoronida	0.068	0.0283	0.181	55.556	.
Polychaeta Nereidae	0.068	0.0421	0.110	22.222	.
Palaemonetes spp	0.065	0.0257	0.194	77.778	.
Polychaeta Trochophores & Nectochaetes	0.061	.	0.061	11.111	.
Pinnixa spp	0.060	0.0239	0.127	55.556	.
Bothidae Etropus microstomus	0.054	0.0335	0.121	33.333	.
Cancer sp megalopa	0.052	0.0472	0.147	33.333	.

TYPE=3 SITE=22

NAME		MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Polychaeta	Autolytus spp	0.0508412	0.0457038	0.0965450	22.2222	.
Portunus spinicarpus Megalopa		0.0449250	.	0.0449250	11.1111	.
Polychaete F		0.0404875	.	0.0404875	11.1111	.
Ovalipes quadulpensis megalopa		0.0327200	.	0.0327200	11.1111	.
Polychaeta	Magelonidae	0.0305175	.	0.0305175	11.1111	.
Syngnathidae	Hippocampus eratus	0.0294225	.	0.0294225	11.1111	.
Bothidae	Scophthalmus aquasus	0.0216017	0.0079031	0.0367450	33.3333	.
Polychaeta	Capitellidae	0.0203950	.	0.0203950	11.1111	.
Gobiesucidae	Gobiosox strumosus	0.0183287	0.0087162	0.0270450	22.2222	.
Bivalve I		0.0179525	.	0.0179525	11.1111	.
Cynoglossidae	Symphurus plagiusa	0.0163037	0.0008962	0.0172000	22.2222	.
Pinnotheres zoea		0.0151575	.	0.0151575	11.1111	.
Libinia dubia Megalopa		0.0132700	.	0.0132700	11.1111	.
Lophiidae	Lophius americana	0.0103287	0.0027812	0.0131100	22.2222	.
Stromateidae	Peprilus triacanthus	0.0077487	0.0018637	0.0096125	22.2222	.
Syngnathidae	Syngnathus fuscus	0.0077025	.	0.0077025	11.1111	.
Ocypode sp zoea		0.0040575	.	0.0040575	11.1111	.

TYPE=3 SITE=23

NAME		MNMNABUN	SEMNABUN	MXMNABUN	PCCUR	PCOVER
Engraulidae egg		149.019	79.0800	502.136	85.714	71.4286
Larvacea		23.671	17.4809	127.218	100.000	28.5714
Crangon septemspinosa		7.085	3.7044	27.350	100.000	28.5714
Callinectes sp zoea		6.955	3.2753	19.309	71.429	14.2857
Other Bivalves		5.903	5.8862	11.790	28.571	14.2857
All Bivalves		5.903	5.8862	11.790	28.571	14.2857
All Fisheggs		5.540	3.2630	24.497	100.000	14.2857
Sciaenidae egg		5.064	3.2960	24.422	100.000	14.2857
Phoronida		3.617	3.4827	10.582	42.857	14.2857
Emerita talpoida		2.540	1.2112	7.176	71.429	.
Xanthid Crabs		2.365	0.6491	4.232	57.143	.
Pagurid Crabs		1.838	0.8817	5.003	71.429	.
Engraulidae fry		1.779	0.8822	2.681	42.857	.
Callianassa spp		1.678	1.5705	4.819	42.857	.
Bowmaniella dissimilis		1.614	1.4439	4.498	42.857	.
Upogebia affinis		1.384	0.6636	3.933	71.429	.
Euceramus praelongus		1.350	0.7538	4.302	71.429	.
Bothidae egg		1.347	1.3254	2.672	28.571	.
Polychaeta	Capitellidae	1.265	0.8025	2.845	42.857	.
Polychaeta	*Spionidae*	1.197	0.6165	3.465	71.429	.
Pinnixa spp		1.136	0.4691	2.677	71.429	.
Engraulidae	Anchoa mitchelli	0.623	0.2375	1.008	42.857	.
Uca spp		0.510	0.2167	1.194	71.429	.
Mysid		0.459	0.1136	0.572	28.571	.
Cancer irroratus zoea		0.447	0.2999	1.041	42.857	.
Gastropods		0.383	0.2129	1.301	85.714	.
Nemertine Pilidium larva		0.380	0.3710	0.751	28.571	.
Ovalipes quadulpensis zoea		0.359	0.1227	0.770	71.429	.
Polychaete A		0.356	.	0.356	14.286	.
Polychaeta	Terebellidae spp	0.354	0.1182	0.555	42.857	.
Bothidae	Scophthalmus aquasus	0.341	0.3065	0.647	28.571	.
Lucifer Faxoni		0.318	0.2833	1.167	57.143	.
Squillid Antizoea		0.298	0.2580	0.813	42.857	.
Polychaete F		0.289	0.2652	0.555	28.571	.
Palaemonetes spp		0.265	0.1382	0.601	57.143	.
Libinia spp zoea		0.236	0.1274	0.364	28.571	.
Sciaenidae	Cynocion regalis	0.232	0.1010	0.426	42.857	.
Neomysis americana		0.227	0.1216	0.348	28.571	.
Polychaeta	Magelonidae	0.216	0.1973	0.611	42.857	.
Other Fish Eggs		0.214	0.1706	0.553	42.857	.
Ophiidae	Rissola marginata	0.206	.	0.206	14.286	.
Penaeid shrimp		0.165	0.1560	0.321	28.571	.
Mysidopsis bigelowi		0.149	0.1221	0.393	42.857	.
Bivalve I		0.101	0.0793	0.180	28.571	.
Ogyrides limicola		0.086	.	0.086	14.286	.
Polychaeta	Trochopnores & Nectochaetes	0.085	.	0.085	14.286	.
Pinnotheres spp		0.077	0.0341	0.163	57.143	.
Hippolyte pleuracantha		0.066	.	0.066	14.286	.
Callinectes sp megalopa		0.059	0.0219	0.081	28.571	.
Lepidopa websteri		0.037	.	0.037	14.286	.
Polychaeta	Nereidae	0.032	0.0228	0.054	28.571	.
Portunus spinicarpus Megalopa		0.028	.	0.028	14.286	.
Stromateidae	Peprilus triacanthus	0.028	0.0110	0.039	28.571	.
Blenniidae	Hypsoblennius hentzi	0.027	0.0203	0.048	28.571	.

TYPE=3 SITE=23

NAME	MNMNABUN	SEMNABUN	MXMNABUN	POCCUR	PCOVER
Ovalipes quadulpensis megalopa	0.0266550	.	0.0266550	14.2857	.
Naushonia crangonoides	0.0260962	0.0170362	0.0431325	28.5714	.
Polychaeta Nereis succinea Heteronereid	0.0241625	.	0.0241625	14.2857	.
Squilla (empusa?) protozoea	0.0216542	0.0129456	0.0474400	42.8571	.
Ocypode sp zoea	0.0187325	.	0.0187325	14.2857	.
Clupeidae Brevoortia tyrannus	0.0181200	.	0.0181200	14.2857	.
Leptochela serratorbita	0.0172375	.	0.0172375	14.2857	.
Atherinidae Menidia menidia	0.0165867	0.0062017	0.0271825	42.8571	.
Libinia dubia Megalopa	0.0160075	.	0.0160075	14.2857	.
Dissodactylus mellitae zoea	0.0158950	0.0006725	0.0165675	28.5714	.
Polychaeta Autolytus spp	0.0151375	0.0025869	0.0195750	42.8571	.
Cancer sp megalopa	0.0120825	.	0.0120825	14.2857	.
Lopnilidae Lophius americana	0.0086175	.	0.0086175	14.2857	.
Megalopa A	0.0053075	.	0.0053075	14.2857	.

TYPE=2

NAME		MNMNABUN	SEMNABUN	MXMNABUN	PCOCCUR	PCOVER	FILTER2
Engraulidae egg		48.5262	8.07841	412.359	65.0794	39.5825	9
Callinectes sp zoea		21.2159	6.62138	354.425	56.3492	13.4921	9
Other Fish Eggs		9.2614	4.66560	219.318	38.8889	3.9683	4
All Fisheggs		7.4808	2.32481	220.465	75.3968	6.3492	7
Callinectes sp megalopa		5.0110	4.52023	152.627	28.5714	1.5873	2
Larvacea		3.6148	1.18657	54.636	54.7619	5.5556	4
Sciaenidae egg		3.1213	1.70348	100.379	65.0794	1.5873	2
Crangon septemspinosa		1.8606	1.17149	95.458	65.0794	1.5873	2
Cancer irroratus zoea		0.8737	0.50469	18.690	39.6825	1.5873	2
Cancer sp megalopa		0.7358	0.31954	6.040	15.0794	.	.
Nemertine Pilidium larva		0.5647	0.36728	4.059	9.5238	.	.
Squillid Antizoea		0.5538	0.25199	9.719	34.1270	.	.
Uca spp		0.5159	0.31306	19.970	50.7937	0.7937	1
Lucifer faxoni		0.3988	0.14715	5.965	38.8889	.	.
Palaemonetes spp		0.3024	0.13782	5.085	29.3651	.	.
Bothidae spp		0.2788	.	0.279	0.7937	.	.
Engraulidae fry		0.2463	0.06817	2.306	27.7778	.	.
Upogebia affinis		0.1763	0.04722	1.935	35.7143	.	.
Clupeidae	Brevoortia tyrannus	0.1686	0.15023	0.768	3.9683	.	.
Stromateidae	Peprilus triacanthus	0.1490	0.14351	0.436	2.3810	.	.
Gobiesocidae	Gobiosox strumosus	0.1490	0.14353	0.436	2.3810	.	.
Anthrinidae	Membras martinica	0.1259	0.03564	0.963	28.5714	.	.
Uvalipes quadulpensis zoea		0.1237	0.04148	1.803	36.5079	.	.
Xanthid Crabs		0.1180	0.02894	0.863	34.9206	.	.
Polychaeta	Spionidae	0.1043	0.05098	2.487	44.4444	.	.
Gastropods		0.1028	0.03824	0.791	26.9841	.	.
Penaeid shrimp		0.0982	0.06739	0.698	7.9365	.	.
Squilla (empusa?) protozoea		0.0789	0.03802	0.837	19.0476	.	.
Blenilidae	Hypsoblennius hentzi	0.0786	0.04624	1.017	17.4603	.	.
Atherinidae	Menidia menidia	0.0617	0.02218	0.693	30.9524	.	.
Megalopa A		0.0604	0.03345	0.288	6.3492	.	.
Mysid		0.0560	.	0.056	0.7937	.	.
Other Bivalves		0.0537	0.04409	0.450	7.9365	.	.
All Bivalves		0.0497	0.03659	0.450	9.5238	.	.
Polychaeta	Capitellidae	0.0496	0.03518	0.224	4.7619	.	.
Polychaeta	Terebellidae spp	0.0480	0.01586	0.188	11.1111	.	.
Ocypode sp zoea		0.0442	0.01433	0.190	12.6984	.	.
Emerita talpoida		0.0425	0.01489	0.236	16.6667	.	.
Pinnixa spp		0.0403	0.01078	0.153	19.0476	.	.
Bothidae egg		0.0402	0.01015	0.175	18.2540	.	.
Alpheus heterochaelis		0.0393	.	0.039	0.7937	.	.
Sesarma sp zoea		0.0363	.	0.036	0.7937	.	.
Polychaeta	Mayelonidae	0.0351	.	0.035	0.7937	.	.
Engraulidae	Anchoa mitchelli	0.0329	0.01602	0.249	11.9048	.	.
Pagurid Crabs		0.0322	0.00936	0.299	28.5714	.	.
Polychaeta	Trochophores & Nectochaetes	0.0307	0.01345	0.070	3.9683	.	.
Polychaeta	Autolytus spp	0.0296	0.01739	0.443	20.6349	.	.
Phoronida		0.0235	0.00883	0.104	11.9049	.	.
Mysidopsis bigelowi		0.0224	0.00694	0.084	11.9048	.	.
Gaulidae	Urophysis regius	0.0220	0.01059	0.122	9.5239	.	.
Portunus spinicarpus Megalopa		0.0215	0.00443	0.050	12.6984	.	.
Callianassa spp		0.0213	0.00702	0.077	10.3175	.	.
Sciaenidae	Cynoscion regalis	0.0205	0.01301	0.110	6.3492	.	.
bivalve a		0.0201	0.01490	0.050	2.3810	.	.

TYPE=2

NAME		MNMNABUN	SEMNABUN	MXMNABUN	PCOCCUR	PCOVER	FILTER2
Polychaeta	Nereidae	0.0191170	0.00538494	0.0543050	8.7302	.	.
Nausnonia crangonoides		0.0173762	0.00461375	0.0219900	1.5873	.	.
Ammodytidae	Ammodytes hexapterus	0.0156272	0.00812969	0.0709650	6.3492	.	.
Cancer #2 zoea		0.0146687	0.00176125	0.0164300	1.5873	.	.
Euceramus praelongus		0.0142259	0.00454650	0.0567000	8.7302	.	.
Libinia emarginata Megalopa		0.0138825	.	0.0138825	0.7937	.	.
Boumaniella dissimilis		0.0124375	0.00476975	0.0562000	11.1111	.	.
Portunus sp zoea		0.0123800	0.00156250	0.0139425	1.5873	.	.
Lophidae	Lophius americana	0.0122169	0.00664576	0.0321325	3.1746	.	.
Metamysidopsis		0.0116700	0.00432000	0.0159900	1.5873	.	.
Hippolyte pleuracantha		0.0114650	.	0.0114650	0.7937	.	.
Alphaeus normanni		0.0102512	0.00612375	0.0163750	1.5873	.	.
Libinia spp zoea		0.0102493	0.00275596	0.0220775	5.5556	.	.
Neomysis americana		0.0102384	0.00234656	0.0490525	17.4603	.	.
Polychaete F		0.0098925	.	0.0098925	0.7937	.	.
Pinnotheres spp		0.0095842	0.00220285	0.0219975	7.9365	.	.
Tetraodontidae	Sphaeroides maculatus	0.0079569	0.00213403	0.0136825	3.1746	.	.
Bothidae	Scophthalmus aquasus	0.0077287	0.00182503	0.0116600	3.1746	.	.
Portunid crab		0.0073500	.	0.0073500	0.7937	.	.
Syngnathidae	Syngnathus fuscus	0.0066900	.	0.0366900	0.7937	.	.
Bivalve 1		0.0066605	0.00165658	0.0109400	3.9683	.	.
Pomatomidae	Pomatomus saltatrix	0.0062748	0.00090498	0.0115200	8.7302	.	.
Triglidae	Prionotus carolinus	0.0061100	0.00188500	0.0379950	1.5873	.	.
Belonidae	Tylosurus crocodilis	0.0059950	0.00324250	0.0392375	1.5873	.	.
Libinia dubia Megalopa		0.0057767	0.00130268	0.0383650	2.3810	.	.
Gyrides limicola		0.0054315	0.00091361	0.0386475	3.9683	.	.
Hemiramphidae	Hyporhamphus unifasciatus	0.0053825	.	0.0353825	0.7937	.	.
Lepidopa websteri		0.0052385	0.00123168	0.0394825	3.9683	.	.
Bothidae	Paralichthys dentatus	0.0051712	0.00052375	0.0356950	1.5873	.	.
Gobiidae	Gobiosoma bosci	0.0046650	.	0.0346650	0.7937	.	.
Mugilidae	Mugil sp	0.0042975	0.00054420	0.0353825	3.1746	.	.
Polychaeta	Nephtys sp	0.0038100	.	0.0338100	0.7937	.	.
Acetes carolinae		0.0034275	0.00096750	0.0343950	1.5873	.	.

TYPE=3

NAME	MNMNABUN	SEMNABUN	MXMNABUN	PCOCCUR	PCOVER	FILTER2
Engraulidae egg	82.2019	15.5446	502.136	64.7619	46.6667	9
Larvacea	33.7090	7.7694	354.588	80.0000	32.3810	9
Callinectes sp zoea	30.7295	7.8350	375.352	54.2857	27.6190	9
Crangon septemspinosa	16.8232	3.1117	141.775	90.4762	26.6667	8
All Fisheggs	5.7985	1.1156	53.641	94.2857	17.1429	8
Sciaenidae egg	5.4632	1.0938	48.009	72.3810	13.3333	7
Other Fish Eggs	4.1513	1.8703	52.440	34.2857	3.8095	3
Sesarma sp zoea	3.8678	2.1986	6.066	1.9048	.	.
Pagurid Crabs	3.6935	0.8128	43.186	70.4762	7.6190	5
Cancer irroratus zoea	3.6252	2.0298	122.669	58.0952	3.8095	3
Ovalipes zoea	3.3955	.	3.395	0.9524	.	.
Gastropods	3.2543	0.9536	55.311	62.8571	5.7143	4
Engraulidae fry	2.5815	0.6426	14.484	29.5238	0.9524	1
Uca spp	2.5141	0.6677	26.211	56.1905	4.7619	3
Upogebia affinis	2.2520	0.5961	24.776	51.4286	2.8571	2
Mysidopsis bigelowi	1.9377	0.7752	21.171	40.0000	2.8571	3
Xanthid Crabs	1.7448	0.4363	21.247	58.0952	1.9048	2
Neomysis americana	1.6042	0.5332	17.842	39.0476	0.9524	1
Lucifer faxoni	1.5461	0.5111	15.885	45.7143	2.8571	3
Ovalipes quadulpensis zoea	1.5302	0.3217	11.665	57.1429	0.9524	1
Other Bivalves	1.2974	0.5642	12.711	28.5714	1.9048	2
All Bivalves	1.2222	0.5028	12.711	32.3810	1.9048	2
Nemertina Pilidium larva	1.1374	0.5918	7.874	13.3333	.	.
Euceramus praelongus	1.0754	0.2804	9.832	47.6190	.	.
Bowmaniella dissimilis	1.0447	0.2821	5.849	29.5238	.	.
Callianassa spp	1.0387	0.4479	12.822	33.3333	0.9524	1
Polychaeta Spionidae	0.9144	0.1361	7.139	80.0000	.	.
Pinnixa spp	0.8989	0.1913	6.482	55.2381	.	.
Phoronida	0.8650	0.3600	10.582	39.0476	0.9524	1
Polychaeta Terebellidae spp	0.8057	0.2142	7.583	35.2381	.	.
Emerita talpoida	0.7858	0.1732	7.176	50.4762	.	.
Polychaete F	0.7575	0.4686	3.964	7.6190	.	.
Polychaeta Trochophores & Nectochaetes	0.6514	0.4467	10.362	21.9048	0.9524	1
Squillid Antizoea	0.6140	0.1661	4.442	36.1905	.	.
Engraulidae Anchoa mitchelli	0.6088	0.1473	3.430	31.4286	.	.
Tetraodontidae Sphaeroides maculatus	0.5985	.	0.599	0.9524	.	.
Unidentifiable fish	0.5499	0.0296	0.579	1.9048	.	.
Polychaeta Capitellidae	0.5392	0.2710	2.845	9.5239	.	.
Bivalve I	0.5090	0.2374	4.226	20.9524	.	.
Spisula solidissima	0.4815	0.3893	0.871	1.9048	.	.
Mysid	0.4604	0.1498	0.993	4.7619	.	.
Polychaeta Mayeloniidae	0.4394	0.1702	2.660	15.2381	.	.
Pinnotheres spp	0.4029	0.0947	2.759	33.3333	.	.
Palaemonetes spp	0.3608	0.1950	11.166	57.1429	0.9524	1
Triglidae Prionotus carolinus	0.3655	0.1531	1.868	10.4762	.	.
Libinia spp zoea	0.3606	0.1268	2.844	26.6667	.	.
Bothidae Paralichthys dentatus	0.2875	0.0950	0.387	2.8571	.	.
Sciaenidae Cynocion regalis	0.2645	0.0550	0.776	21.9048	.	.
Acetes carolinae	0.2511	0.1102	0.966	10.4762	.	.
Hippolyte pleuracantha	0.2394	0.1789	2.553	13.3333	.	.
Bivalve B	0.2372	0.1777	1.301	6.6667	.	.
Ogyrides limicola	0.2308	0.0705	0.650	10.4762	.	.
Anthrinidae Membras martinica	0.2305	0.2175	1.101	4.7619	.	.
Bothidae egg	0.2186	0.0739	2.672	40.9524	.	.

TYPE=3

NAME		MNMNABUN	SEMNABUN	MXMNABUN	PCOCCUR	PCOVER	FILTER2
Portunus sp zoea		0.179682	.	0.17968	0.9524	.	.
Gobiidae	Gobiosoma bosci	0.176137	0.078106	0.60894	8.5714	.	.
Squilla (empusa?) protozoea		0.173901	0.061435	1.38037	23.8095	.	.
Polychaete A		0.172122	0.056992	0.35583	4.7619	.	.
Penaeid shrimp		0.170797	0.052269	0.91863	23.8095	.	.
Naushonia crangonoides		0.149996	0.041147	0.61569	19.0476	.	.
Callinectes sp megalopa		0.144657	0.039887	0.64842	20.9524	.	.
Polychaeta	Syllides verilli	0.143825	.	0.14382	0.9524	.	.
Metamysidopsis		0.140619	0.132369	0.27299	1.9048	.	.
Polychaeta	Nereidae	0.137808	0.037052	0.86669	32.3810	.	.
Bothidae	Etropus microstomus	0.132490	0.034229	0.40770	12.3810	.	.
Dissodactylus mellitae zoea		0.129648	0.064044	0.53542	9.5238	.	.
Sciaenidae	Leiostomus xanthurus	0.128406	0.119379	0.24778	1.9048	.	.
Cynoglossidae	Symphurus plagiusa	0.124638	0.055900	0.49760	8.5714	.	.
Pinnotheres zoea		0.114720	0.071323	0.53696	6.6667	.	.
Ocypode sp zoea		0.111248	0.062551	0.49859	7.6190	.	.
Ophiidae	Rissola marginata	0.107101	0.052198	0.42751	7.6190	.	.
Ammodytidae	Ammodytes hexapterus	0.106891	0.053027	0.49509	9.5238	.	.
Polychaeta	Autolytus spp	0.104974	0.040423	1.22880	34.2857	.	.
Cancer #2 zoea		0.095393	0.034174	0.22401	5.7143	.	.
Lepidopa websteri		0.095378	0.035851	0.45994	13.3333	.	.
Shrimp 6		0.094919	0.081021	0.17594	1.9048	.	.
Palaemonidae palaemoninae		0.092747	0.085315	0.26336	2.8571	.	.
Bothidae	Scophthalmus aquasus	0.090772	0.027284	0.64707	26.6667	.	.
Cancer sp megalopa		0.086654	0.030350	0.37472	12.3810	.	.
Libinia dubia Megalopa		0.082355	0.047499	0.50275	10.4762	.	.
Megalopa A		0.072108	0.035999	0.44145	12.3810	.	.
Pomatomidae	Pomatomus saltatrix	0.070635	.	0.07063	0.9524	.	.
Blenniidae	Hypsoblennius hentzi	0.064242	0.014253	0.24440	27.6190	.	.
Hemiramphidae	Hyporhamphus unifasciatus	0.063212	.	0.06321	0.9524	.	.
Alpheus normanni		0.058766	0.051599	0.11036	1.9048	.	.
Gobiesocidae	Gobiosox strumosus	0.054733	0.016031	0.16523	10.4762	.	.
Uvalipes quadulpensis megalopa		0.053577	0.023954	0.10136	2.8571	.	.
Sciaenidae spp		0.048067	.	0.04807	0.9524	.	.
Libinia emaryinata Megalopa		0.046505	0.026159	0.09643	2.8571	.	.
Atherinidae	Menidia menidia	0.038934	0.015932	0.19553	13.3333	.	.
Portunus spinicarpus Megalopa		0.036729	0.008858	0.07626	7.6190	.	.
Lophiidae	Lophius americana	0.034634	0.013303	0.13195	9.5238	.	.
Megalopa B		0.031852	.	0.03185	0.9524	.	.
DUMMY		0.028667	.	0.02867	0.9524	.	.
Persephone punctata		0.027657	.	0.02766	0.9524	.	.
Stromateidae	Peprilus triacanthus	0.025554	0.007486	0.05368	6.6667	.	.
Polychaeta	Nereis succinea Heteronereid	0.024162	.	0.02416	0.9524	.	.
Polychaeta	Tomopteris spp	0.021701	0.005042	0.03275	3.8095	.	.
Syngnathidae	Hippocampus eratus	0.017707	0.011715	0.02942	1.9048	.	.
Leptocheia serratorbita		0.017237	.	0.01724	0.9524	.	.
Clupeidae	Brevoortia tyrannus	0.016529	0.003757	0.02251	3.8095	.	.
Portunid crab		0.013927	.	0.01393	0.9524	.	.
Alpheus heterochaelis		0.010267	0.002812	0.01308	1.9048	.	.
Anadara spp		0.009180	.	0.00918	0.9524	.	.
Cancellaria reticulata		0.008980	.	0.00898	0.9524	.	.
Fish - unknown		0.007777	0.002150	0.00993	1.9048	.	.
Syngnathidae	Syngnathus fuscus	0.007466	0.000439	0.00841	4.7619	.	.
Barnacle nauplius		0.005945	.	0.00594	0.9524	.	.

Table A3. The taxonomic groups that met the abundance/occurrence criteria of $10/m^3$ in at least 5% of all observations and the station/tow types for which they met the criteria. The **"MNMNABUND"** column has the same meaning as in Table A2.

SPECIES NAME=All Bivalves TOW TYPE=3

SITE	MNMNABUN
20	4.39388
23	5.90348

SPECIES NAME=All Fisheggs TOW TYPE=2

SITE	MNMNABUN
11	1.8115
1	2.9181
23	5.4373
21	12.4146
22	12.5710
13	12.8154
10	20.1181

SPECIES NAME=All Fisheggs TOW TYPE=3

SITE	MNMNABUN
10	2.6633
1	4.6275
23	5.5401
11	6.7344
12	6.8622
21	7.6524
22	9.6710
20	11.2565

SPECIES NAME=Callianassa spp TOW TYPE=3

SITE	MNMNABUN
10	3.08131

SPECIES NAME=Callinectes sp megalopa TOW TYPE=2

SITE	MNMNABUN
11	3.5372
20	54.2352

SPECIES NAME=Callinectes sp zoea TOW TYPE=2

SITE	MNMNABUN
13	2.6299
23	4.1057
12	5.9777
21	10.5573
11	19.2298
22	20.3795
20	30.1541
10	35.3619
1	57.3084

SPECIES NAME=Callinectes sp zoea TOW TYPE=3

SITE	MNMNABUN
12	4.7325
13	4.8480
23	6.9551
10	14.8690
1	24.0905
22	25.1026
20	42.3037
21	65.4075
11	98.7420

SPECIES NAME=Cancer irroratus zoea TOW TYPE=2

SITE	MNMNABUN
11	2.69771
22	8.74733

SPECIES NAME=Cancer irroratus zoea TOW TYPE=3

SITE	MNMNABUN
10	3.1266
22	3.7562
21	21.2674

SPECIES NAME=Crangon septemspinosa TOW TYPE=2

SITE	MNMNABUN
13	1.44494
10	9.40742

SPECIES NAME=Crangon septemspinosa TOW TYPE=3

SITE	MNMNABUN
23	7.0851
22	9.1116
13	12.7368
11	15.1371
1	22.3392
10	25.2634
21	26.4070
20	29.9550

SPECIES NAME=Engraulidae egg TOW TYPE=2

SITE	MNMNABUN
13	13.8503
20	27.9187
12	32.6810
23	34.9033
11	38.7913
21	61.4061
1	62.5974
22	78.1976
10	87.4714

SPECIES NAME=Engraulidae egg TOW TYPE=3

SITE	MNMNABUN
12	23.187
13	45.868
21	56.538
1	69.805
20	74.414
11	79.806
10	108.846
22	135.024
23	149.019

SPECIES NAME=Engraulidae fry TOW TYPE=3

SITE	MNMNABUN
21	5.51830

SPECIES NAME=Gastropods TOW TYPE=3

SITE	MNMNABUN
13	2.6554
11	2.8562
21	7.7862

SPECIES NAME=Gastropods TOW TYPE=3

SITE	MNMNABUN
20	10.3100

SPECIES NAME=Larvacea TOW TYPE=2

SITE	MNMNABUN
21	3.0255
23	3.4204
20	7.7549
11	11.7856

SPECIES NAME=Larvacea TOW TYPE=3

SITE	MNMNABUN
13	8.0376
12	9.2943
10	11.6334
23	23.6708
1	23.8054
20	26.6733
11	58.3390
22	67.5214
21	81.6600

SPECIES NAME=Lucifer Faxoni TOW TYPE=3

SITE	MNMNABUN
1	2.14679
20	2.98036
22	3.98825

SPECIES NAME=Mysidopsis bigelowi TOW TYPE=3

SITE	MNMNABUN
11	3.04199
10	3.16925
1	4.70813

SPECIES NAME=Neomysis americana TOW TYPE=3

SITE	MNMNABUN

SPECIES NAME=Other Bivalves TOW TYPE=3

SITE	MNMNABUN
20	4.35920
23	5.90348

SPECIES NAME=Other Fish Eggs TOW TYPE=2

SITE	MNMNABUN
11	4.0918
23	7.6496
13	18.4534
10	37.7029

SPECIES NAME=Other Fish Eggs TOW TYPE=3

SITE	MNMNABUN
11	5.4571
20	7.7156
12	17.6375

SPECIES NAME=Ovalipes quadulpensis zoea TOW TYPE=3

SITE	MNMNABUN
1	2.31336

SPECIES NAME=Pagurid Craus TOW TYPE=3

SITE	MNMNABUN
10	3.03531
12	4.39061
1	5.23812
20	5.38008
13	6.44083

SPECIES NAME=Palaemonetes spp TOW TYPE=3

SITE	MNMNABUN
1	1.88394

SPECIES NAME=Phoronida TOW TYPE=3

SITE	MNMNABUN
23	3.61699

SPECIES NAME=Polychaeta Trochophores & Nectochaetes TOW TYPE=3

SITE	MNMNABUN
1	1.64982

SPECIES NAME=Sciaenidae egg TOW TYPE=2

SITE	MNMNABUN
22	11.1689
21	11.3199

SPECIES NAME=Sciaenidae egg TOW TYPE=3

SITE	MNMNABUN
10	4.50920
23	5.06368
1	5.89520
11	6.43055
21	6.81001
20	7.78571
22	9.33584

SPECIES NAME=Uca spp TOW TYPE=2

SITE	MNMNABUN
10	3.08579

SPECIES NAME=Uca spp TOW TYPE=3

SITE	MNMNABUN
21	3.92129
11	4.14648
10	7.38204

SPECIES NAME=Upogebia affinis TOW TYPE=3

SITE	MNMNABUN
1	5.29600
10	7.73876

SPECIES NAME=Xanthid Crabs TOW TYPE=3

SITE	MNMNABUN
10	2.58971
1	3.39936

SPECIES NAME=All divalves

TYPE	SITE	MNMNA3UN
3	20	4.39388
3	23	5.90348

SPECIES NAME=All Fisheggs

TYPE	SITE	MNMNA3UN
2	11	1.8115
2	1	2.9181
2	23	5.4373
2	21	12.4146
2	22	12.5710
2	13	12.8154
2	10	20.1181
3	10	2.6533
3	1	4.6275
3	23	5.5401
3	11	6.7344
3	12	6.8522
3	21	7.6524
3	22	9.6710
3	20	11.2565

SPECIES NAME=Callianassa spp

TYPE	SITE	MNMNA3UN
3	10	3.08131

SPECIES NAME=Callinectes sp megalopa

TYPE	SITE	MNMNA3UN
2	11	3.5372
2	20	54.2352

SPECIES NAME=Callinectes sp zoea

TYPE	SITE	MNMNA3UN
2	13	2.6299
2	23	4.1357
2	12	5.9777
2	21	10.5573
2	11	19.2299
2	22	20.3795
2	20	30.1541
2	10	35.3519
2	1	57.3384
3	12	4.7325

SPECIES NAME=Callinectes sp zoea

TYPE	SITE	MNMNA3UN
3	13	4.8480
3	23	6.9551
3	10	14.8590
3	1	24.0905
3	22	25.1026
3	20	42.3037
3	21	65.4375
3	11	88.7420

SPECIES NAME=Cancer irroratus zoea

TYPE	SITE	MNMNA3UN
2	11	2.6977
2	22	8.7473
3	10	3.1266
3	22	3.7562
3	21	21.2574

SPECIES NAME=Crangon septemspinosa

TYPE	SITE	MNMNA3UN
2	13	1.4449
2	10	8.4374
3	23	7.0351
3	22	9.1116
3	13	12.7368
3	11	15.1371
3	1	22.3392
3	10	25.2534
3	21	26.4370
3	20	29.9550

SPECIES NAME=Engraulidae egg

TYPE	SITE	MNMNA3UN
2	13	13.950
2	20	27.919
2	12	32.581
2	23	34.903
2	11	38.791
2	21	61.406
2	1	62.597
2	22	78.198
2	10	87.471
3	12	23.187
3	13	45.368
3	21	56.538
3	1	69.305

SPECIES NAME=Engraulidae egg

TYPE	SITE	MNMNA3UN
3	20	74.614
3	11	79.806
3	10	108.346
3	22	135.324
3	23	149.319

SPECIES NAME=Engraulidae fry

TYPE	SITE	MNMNA3UN
3	21	5.51330

SPECIES NAME=Gastropods

TYPE	SITE	MNMNA3UN
3	13	2.6554
3	11	2.8502
3	21	7.7802
3	20	10.3100

SPECIES NAME=Larvacea

TYPE	SITE	MNMNA3UN
2	21	3.0255
2	23	3.4204
2	20	7.7549
2	11	11.7956
3	13	8.0376
3	12	9.2943
3	10	11.6334
3	23	23.6708
3	1	23.8054
3	20	26.6733
3	11	58.3390
3	22	67.5214
3	21	81.6500

SPECIES NAME=Lucifer Faxoni

TYPE	SITE	MNMNA3UN
3	1	2.14579
3	20	2.99336
3	22	3.98325

SPECIES NAME=Mysidopsis bigelowi

TYPE	SITE	MNMNA3UN
3	11	3.04199
3	10	3.16925
3	1	4.70913

SPECIES NAME=Neomysis americana

TYPE	SITE	MNMNA3UN
3	10	3.04921

SPECIES NAME=Other Bivalves

TYPE	SITE	MNMNA3UN
3	20	4.35920
3	23	5.90348

SPECIES NAME=Other Fish Eggs

TYPE	SITE	MNMNA3UN
2	11	4.0918
2	23	7.6496
2	13	18.4534
2	10	37.7329
3	11	5.4571
3	20	7.7156
3	12	17.6375

SPECIES NAME=Ovalipes quadulpensis zoea

TYPE	SITE	MNMNA3UN
3	1	2.31336

SPECIES NAME=Pagurid Crabs

TYPE	SITE	MNMNA3UN
3	10	3.03531
3	12	4.39061
3	1	5.23312
3	20	5.38308
3	13	6.44383

SPECIES NAME=Palaemonetes spp

TYPE	SITE	MNMNA3UN
3	1	1.88394

SPECIES NAME=Phoronida

TYPE	SITE	MNMNA3UN
3	23	3.61599

SPECIES NAME=Polychaeta Trochophores & Nectochaetes

TYPE	SITE	MNMNA3UN
3	1	1.64982

SPECIES NAME=Sciaenidae egg

TYPE	SITE	MNMNA3UN
2	22	11.1589
2	21	11.3199
3	10	4.5392
3	23	5.0537
3	1	5.8952
3	11	6.4305
3	21	6.8100
3	20	7.7857
3	22	9.3358

SPECIES NAME=Uca spp

TYPE	SITE	MNMNA3UN
2	10	3.08579
3	21	3.92129
3	11	4.14548
3	10	7.38204

SPECIES NAME=Upogebia affinis

TYPE	SITE	MNMNA3UN
3	1	5.29500
3	10	7.73976

SPECIES NAME=Xantnid Crabs

TYPE	SITE	MNMNA3UN
3	10	2.58971
3	1	3.99936

Table A4. The abundance data for important meroplankton groups of the study area. The values are the means of four replicates, while the values in parentheses are the standard errors.

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 1
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irror atus zoea	Cancer irror atus Megalop
11DEC83	0.00 (0.00)	0.00 (.)	0.00 (.)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	0.03 (0.02)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	0.87 (0.25)	0.27 (0.06)
01JUN84	0.00 (.)	0.01 (0.01)	0.08 (0.04)	0.13 (0.08)
13JUN84	0.00 (.)	3.54 (0.85)	0.00 (.)	0.00 (.)
11JUL84	0.00 (.)	5.96 (1.96)	0.01 (0.01)	0.00 (.)
26JUL84	0.01 (0.01)	364.42 (78.19)	0.00 (.)	0.00 (.)
01AUG84	0.01 (0.01)	2.79 (0.11)	0.03 (0.03)	0.00 (.)
22AUG84	0.01 (0.01)	80.16 (28.34)	0.00 (.)	0.00 (.)
20SEP84	0.03 (0.01)	1.43 (0.34)	0.00 (.)	0.00 (.)
25SEP84	0.10 (0.08)	0.15 (0.03)	0.00 (.)	0.00 (.)

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 1
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irroratus zoea	Cancer irroratus Megalop
03OCT83	0.01 (0.01)	0.00 (.)	0.45 (0.16)	0.00 (.)
13OCT83	0.10 (0.04)	0.00 (.)	0.00 (.)	0.00 (.)
01NOV83	0.00 (.)	0.00 (.)	0.15 (0.12)	0.00 (.)
19NOV83	0.00 (.)	0.00 (.)	0.12 (0.04)	0.00 (0.00)
11DEC83	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
14MAR84	0.00 (.)	0.00 (.)	0.02 (0.02)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	1.09 (0.46)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	6.93 (0.69)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	0.85 (0.46)	0.01 (0.01)
01JUN84	0.00 (.)	0.00 (0.00)	0.07 (0.05)	0.03 (0.03)
13JUN84	0.00 (.)	57.28 (23.33)	0.01 (0.01)	0.00 (.)
11JUL84	0.07 (0.07)	44.57 (12.86)	0.01 (0.01)	0.00 (.)
26JUL84	0.00 (.)	2.71 (0.53)	0.28 (0.13)	0.00 (.)
01AUG84	0.05 (0.05)	21.82 (4.44)	0.00 (.)	0.00 (.)
22AUG84	0.01 (0.01)	38.19 (12.40)	0.00 (.)	0.00 (.)
20SEP84	0.64 (0.14)	4.06 (1.42)	0.04 (0.03)	0.00 (.)

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 10
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irror atus zoea	Cancer irror atus Megalop
02NOV83	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
19NOV83	0.00 (.)	0.00 (.)	0.06 (0.02)	0.00 (.)
04JAN84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
02FEB84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
02MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	0.21 (0.07)	0.03 (0.01)
02JUN84	0.00 (.)	0.01 (0.01)	0.10 (0.02)	0.15 (0.05)
13JUN84	0.00 (.)	165.68 (150.01)	1.83 (1.72)	0.00 (.)
11JUL84	0.00 (.)	72.33 (25.63)	0.03 (0.03)	0.00 (.)
26JUL84	0.00 (.)	7.02 (2.96)	0.00 (.)	0.00 (.)
01AUG84	0.01 (0.00)	6.92 (2.14)	0.10 (0.07)	0.00 (.)
22AUG84	0.00 (0.00)	64.70 (21.26)	0.00 (.)	0.00 (.)
20SEP84	0.01 (0.01)	1.49 (0.82)	0.00 (.)	0.00 (.)
25SEP84	0.00 (.)	0.10 (0.05)	0.00 (.)	0.00 (.)

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 10
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irroratus zoea	Cancer irroratus Megalop
11DEC83	0.00 (.)	0.00 (.)	0.03 (0.03)	0.00 (.)
14MAR84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	0.47 (0.08)	0.00 (.)
02MAY84	0.00 (.)	0.00 (.)	17.42 (12.50)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	11.18 (1.45)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	1.33 (0.95)	0.00 (.)
13JUN84	0.00 (.)	9.10 (1.61)	0.01 (0.01)	0.00 (.)
11JUL84	0.00 (.)	24.61 (6.33)	0.27 (0.25)	0.00 (.)
26JUL84	0.00 (.)	3.22 (0.27)	0.19 (0.10)	0.00 (.)
01AUG84	0.00 (.)	17.82 (4.37)	0.35 (0.35)	0.00 (.)
22AUG84	0.00 (.)	33.41 (8.93)	0.00 (.)	0.00 (.)
20SEP84	0.36 (0.19)	2.06 (0.42)	0.00 (.)	0.00 (.)

****

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 11
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

****

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irror atus zoea	Cancer irror atus Megaloo
19NOV83	0.00 (0.00)	0.00 (.)	0.00 (.)	0.00 (.)
11DEC83	0.00 (.)	0.00 (.)	0.01 (0.00)	0.50 (0.11)
04JAN84	0.00 (.)	0.00 (.)	0.02 (0.02)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	18.69 (5.77)	6.04 (4.23)
01JUN84	0.00 (.)	0.01 (0.01)	0.14 (0.05)	0.31 (0.34)
13JUN84	0.00 (.)	1.61 (0.47)	0.01 (0.01)	0.00 (.)
11JUL84	0.00 (.)	2.56 (0.53)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	47.02 (19.59)	0.00 (.)	0.00 (.)
01AUG84	0.06 (0.02)	33.10 (18.46)	0.00 (.)	0.00 (.)
22AUG84	0.00 (.)	58.89 (21.87)	0.00 (.)	0.00 (.)
19SEP84	0.04 (0.04)	10.48 (0.79)	0.00 (.)	0.00 (.)
25SEP84	14.05 (3.34)	0.17 (0.07)	0.00 (.)	0.00 (.)

****

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 11
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer Irror atus zoea	Cancer Irror atus Megalop
19NOV83	0.00 (.)	0.00 (.)	0.24 (0.04)	0.02 (0.01)
18APR84	0.00 (.)	0.00 (.)	8.69 (3.14)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	6.98 (2.05)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	2.51 (0.71)	0.13 (0.05)
01JUN84	0.00 (.)	0.00 (.)	0.21 (0.11)	0.37 (0.10)
13JUN84	0.00 (.)	1.55 (0.50)	0.59 (0.59)	0.00 (.)
11JUL84	0.00 (.)	32.46 (13.10)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	3.76 (1.16)	1.57 (0.95)	0.00 (.)
01AUG84	0.00 (.)	34.70 (17.51)	0.24 (0.14)	0.00 (.)
22AUG84	0.17 (0.03)	375.35 (102.23)	0.00 (.)	0.00 (.)
19SEP84	0.16 (0.04)	84.64 (11.79)	0.00 (.)	0.00 (.)

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 12
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irrorat us zoea	Cancer irrorat us Megalop
19NOV83	0.02 (0.02)	0.00 (.)	0.00 (.)	0.05 (0.03)
25JAN84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	0.06 (0.01)	0.12 (0.01)
02JUN84	0.00 (0.00)	0.03 (0.02)	0.05 (0.04)	0.02 (0.01)
13JUN84	0.00 (.)	0.03 (0.01)	0.00 (.)	0.00 (.)
11JUL84	0.00 (.)	1.29 (0.51)	0.00 (.)	0.00 (.)
26JUL84	0.01 (0.01)	7.45 (1.50)	0.00 (.)	0.00 (.)
01AUG84	0.12 (0.04)	38.31 (5.11)	0.16 (0.16)	0.00 (.)
22AUG84	0.00 (0.00)	2.55 (0.32)	0.00 (.)	0.00 (.)
20SEP84	0.00 (.)	0.04 (0.01)	0.00 (.)	0.00 (.)
25SEP84	1.51 (0.21)	0.13 (0.04)	0.00 (.)	0.00 (.)

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 12
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irroratus zoea	Cancer irroratus Megalop
18APR84	0.00 (.)	0.00 (.)	0.19 (0.06)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	0.04 (0.03)	0.00 (.)
02JUN84	0.00 (.)	0.01 (0.01)	0.65 (0.65)	0.00 (.)
13JUN84	0.00 (.)	0.20 (0.03)	0.02 (0.02)	0.00 (.)
11JUL84	0.00 (.)	14.16 (3.54)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	12.58 (7.77)	0.16 (0.16)	0.00 (.)
01AUG84	0.00 (.)	2.96 (0.13)	0.00 (.)	0.00 (.)
22AUG84	0.06 (0.02)	2.90 (0.93)	0.00 (.)	0.00 (.)
20SEP84	0.02 (0.01)	0.33 (0.25)	0.00 (.)	0.00 (.)

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 13
MEAN OF 4 333 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer Irror atus zoea	Cancer Irror atus Megalop
29OCT83	0.00 (.)	0.00 (.)	0.01 (0.00)	0.00 (.)
19NOV83	0.00 (.)	0.00 (.)	0.02 (0.01)	0.00 (.)
11DEC83	0.00 (.)	0.00 (.)	0.01 (0.01)	0.01 (0.01)
25JAN84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
01JUN84	0.00 (.)	0.05 (0.03)	0.24 (0.03)	0.16 (0.10)
13JUN84	0.00 (.)	0.61 (0.14)	0.00 (.)	0.00 (.)
11JUL84	0.00 (.)	6.98 (0.55)	0.03 (0.03)	0.00 (.)
26JUL84	0.00 (.)	11.02 (2.65)	0.00 (.)	0.00 (.)
01AUG84	0.03 (0.01)	2.01 (0.51)	0.01 (0.01)	0.00 (.)
22AUG84	0.00 (.)	0.32 (0.04)	0.00 (.)	0.00 (.)
20SEP84	0.02 (0.02)	0.03 (0.02)	0.00 (.)	0.00 (.)
25SEP84	0.06 (0.02)	0.02 (0.01)	0.00 (.)	0.00 (.)

****

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 13
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

****

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irror atus zoea	Cancer irror atus Megalop
29OCT83	0.00 (.)	0.00 (.)	0.05 (0.02)	0.00 (.)
18APR84	0.00 (.)	0.00 (.)	0.32 (0.15)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	0.68 (0.34)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
13JUN84	0.00 (.)	3.50 (1.00)	0.01 (0.01)	0.00 (.)
11JUL84	0.00 (.)	11.49 (3.63)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	5.15 (1.17)	0.53 (0.28)	0.00 (.)
01AUG84	0.00 (.)	8.29 (3.60)	0.02 (0.02)	0.00 (.)
22AUG84	0.01 (0.01)	0.57 (0.52)	0.00 (.)	0.00 (.)
20SEP84	0.01 (0.01)	0.09 (0.07)	0.00 (.)	0.00 (.)

****

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 20
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irror atus zoea	Cancer irror atus Megalop
18MAY84	0.00 (.)	0.00 (.)	1.38 (0.41)	1.38 (0.10)
01JUN84	0.01 (0.01)	0.04 (0.03)	0.05 (0.02)	0.22 (0.12)
13JUN84	0.00 (.)	0.30 (0.12)	0.00 (.)	0.00 (.)
11JUL84	0.00 (.)	6.73 (0.72)	0.03 (0.03)	0.00 (.)
26JUL84	0.00 (.)	207.73 (28.12)	0.00 (.)	0.00 (.)
01AUG84	0.00 (.)	0.98 (0.18)	0.00 (.)	0.00 (.)
22AUG84	0.00 (.)	0.93 (0.24)	0.00 (.)	0.00 (.)
19SEP84	0.07 (0.02)	23.66 (3.21)	0.00 (.)	0.00 (.)
25SEP84	162.63 (24.96)	0.66 (0.32)	0.00 (.)	0.00 (.)

****

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 20
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

****

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer Irror atus zoea	Cancer Irror atus Megalop
03MAY84	0.00 (.)	0.00 (.)	5.10 (0.88)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	1.22 (0.62)	0.21 (0.17)
01JUN84	0.00 (.)	0.01 (0.01)	0.05 (0.03)	0.06 (0.04)
13JUN84	0.00 (.)	0.56 (0.19)	0.00 (.)	0.00 (.)
11JUL84	0.00 (.)	75.80 (49.08)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	15.21 (7.88)	1.44 (0.53)	0.00 (.)
01AUG84	0.16 (0.16)	14.52 (4.38)	0.00 (.)	0.00 (.)
22AUG84	0.00 (.)	105.74 (35.02)	0.00 (.)	0.00 (.)
19SEP84	0.26 (0.05)	84.28 (8.57)	0.00 (.)	0.00 (.)

****

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 21
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irror atus zoea	Cancer irror atus Megalop
09MAY84	0.00 (.)	0.00 (.)	0.73 (0.44)	0.00 (.)
21MAY84	0.00 (.)	0.00 (.)	0.04 (0.02)	1.85 (0.33)
02JUN84	0.00 (0.00)	0.09 (0.05)	0.08 (0.02)	0.73 (0.38)
14JUN84	0.00 (.)	7.73 (0.94)	0.00 (.)	0.00 (.)
12JUL84	0.00 (.)	9.03 (1.44)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	34.66 (5.45)	0.00 (.)	0.00 (.)
01AUG84	0.02 (0.01)	14.96 (5.37)	0.00 (.)	0.00 (.)
21AUG84	0.00 (.)	2.27 (0.63)	0.00 (.)	0.00 (.)
19SEP84	0.01 (0.01)	5.16 (0.87)	0.00 (.)	0.00 (.)

****

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 21
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

****

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer Irror atus zoea	Cancer Irror atus Megalop
09MAY84	0.00 (.)	0.00 (.)	122.67 (21.15)	0.00 (.)
21MAY84	0.00 (.)	0.00 (.)	1.75 (0.36)	0.12 (0.03)
14JUN84	0.00 (.)	0.92 (0.48)	0.09 (0.07)	0.00 (.)
26JUL84	0.00 (.)	6.55 (3.69)	1.40 (1.29)	0.00 (.)
01AUG84	0.00 (.)	142.83 (67.46)	1.48 (1.35)	0.00 (.)
12AUG84	0.00 (.)	18.90 (4.21)	0.22 (0.18)	0.00 (.)
21AUG84	0.01 (0.01)	182.64 (52.78)	0.00 (.)	0.00 (.)
19SEP84	0.22 (0.06)	40.61 (12.23)	0.00 (.)	0.00 (.)

****

****

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 22
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

****

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irror atus zoea	Cancer irror atus Megalop
09MAY84	0.00 (.)	0.05 (0.05)	17.48 (2.51)	0.00 (.)
21MAY84	0.00 (.)	0.00 (.)	0.02 (0.01)	1.31 (0.13)
02JUN84	0.00 (.)	0.01 (0.01)	0.00 (.)	0.10 (0.06)
14JUN84	0.00 (.)	4.20 (0.80)	0.00 (.)	0.00 (.)
12JUL84	0.00 (.)	5.70 (1.43)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	138.79 (67.39)	0.00 (.)	0.00 (.)
01AUG84	0.00 (.)	9.51 (2.42)	0.00 (.)	0.00 (.)
21AUG84	0.00 (0.00)	2.09 (0.38)	0.00 (.)	0.00 (.)
19SEP84	0.21 (0.10)	2.69 (0.59)	0.00 (.)	0.00 (.)

****

****

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 22
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

****

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irroratus zoea	Cancer irroratus Megalop
09MAY84	0.00 (.)	0.00 (.)	10.82 (1.38)	0.00 (0.00)
21MAY84	0.01 (0.01)	0.00 (.)	7.88 (6.60)	0.15 (.04)
02JUN84	0.00 (.)	0.05 (0.03)	0.01 (0.01)	0.01 (0.01)
13JUN84	0.00 (.)	1.02 (0.30)	0.00 (.)	0.00 (.)
12JUL84	0.00 (.)	16.39 (2.99)	0.05 (0.05)	0.00 (.)
26JUL84	0.00 (.)	16.94 (3.10)	0.03 (0.03)	0.00 (.)
01AUG84	0.00 (.)	39.54 (17.03)	0.00 (.)	0.00 (.)
21AUG84	0.05 (0.22)	24.00 (6.36)	0.00 (.)	0.00 (.)
19SEP84	0.08 (0.01)	77.77 (15.30)	0.00 (.)	0.00 (.)

****

****

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 23
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

****

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irror atus zoea	Cancer irror atus Megalop
09MAY84	0.00 (.)	0.00 (.)	0.89 (0.30)	0.00 (.)
21MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.03 (0.03)
14JUN84	0.01 (0.01)	3.02 (1.78)	0.01 (0.00)	0.00 (.)
12JUL84	0.00 (.)	12.43 (8.99)	0.11 (0.11)	0.00 (.)
26JUL84	0.00 (0.00)	5.54 (3.60)	0.00 (.)	0.00 (.)
01AUG84	0.01 (0.01)	6.10 (1.06)	0.00 (.)	0.00 (.)
21AUG84	0.01 (0.01)	1.52 (0.45)	0.00 (.)	0.00 (.)
20SEP84	0.00 (0.00)	0.10 (0.03)	0.00 (.)	0.00 (.)
26SEP84	1.29 (0.15)	0.03 (0.01)	0.00 (.)	0.00 (.)

****

****

COMMERCIAL CRUSTACEANS
SUMMARY OF TOWS AT STATION 23
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

****

DATE	Callinectes sp. Megalopa	Callinectes sp. Zoea	Cancer irroratus zoea	Cancer irroratus Megalop
09MAY84	0.00 (.)	0.00 (.)	1.04 (0.13)	0.00 (.)
21MAY84	0.00 (.)	0.00 (.)	0.22 (0.12)	0.00 (.)
12JUL84	0.00 (.)	4.83 (0.54)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	7.23 (3.30)	0.08 (0.08)	0.00 (.)
01AUG84	0.00 (.)	19.31 (13.04)	0.00 (.)	0.00 (.)
21AUG84	0.08 (0.07)	2.73 (0.76)	0.00 (.)	0.01 (0.01)
20SEP84	0.04 (0.03)	0.67 (0.24)	0.00 (.)	0.00 (.)

****

FISH EGGS
SUMMARY OF TOWS AT STATION 1
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs		Bothidae Eggs		Sciaenidae Eggs		Other Fish Eggs	
030CT83	0.00	(.)	0.00	(.)	0.02	(0.02)	0.00	(.)
130CT83	0.00	(.)	0.29	(0.10)	0.00	(.)	0.00	(.)
01NOV83	0.00	(.)	0.00	(.)	0.00	(.)	0.01	(0.01)
19NOV83	0.00	(.)	0.00	(.)	0.03	(0.03)	0.01	(0.01)
14MAR84	0.01	(0.01)	0.08	(0.04)	0.00	(.)	0.00	(.)
18APR84	0.00	(.)	0.27	(0.08)	0.00	(.)	0.00	(.)
03MAY84	0.00	(.)	0.23	(0.12)	0.21	(0.16)	0.02	(0.02)
18MAY84	3.98	(1.27)	0.00	(.)	0.28	(0.25)	0.14	(0.14)
01JUN84	43.59	(16.73)	0.00	(.)	1.21	(0.09)	0.06	(0.05)
13JUN84	122.52	(60.39)	0.00	(.)	10.63	(4.47)	0.00	(.)
11JUL84	143.29	(57.73)	0.09	(0.09)	10.22	(4.36)	3.11	(1.83)
26JUL84	55.66	(5.48)	0.00	(.)	2.54	(1.19)	0.00	(.)
01AUG84	237.37	(74.90)	0.19	(0.19)	16.68	(3.82)	0.00	(.)
22AUG84	21.66	(2.30)	0.07	(0.05)	22.43	(5.02)	0.00	(.)
20SEP84	0.16	(0.10)	0.00	(.)	0.62	(0.06)	0.00	(.)

FISH EGGS
SUMMARY OF TOWS AT STATION 1
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
01NOV83	0.00 (.)	0.10 (0.02)	0.00 (.)	0.00 (.)
11DEC83	0.00 (.)	0.01 (0.00)	0.00 (.)	0.00 (.)
14MAR84	0.00 (.)	0.00 (0.00)	0.00 (.)	0.00 (.)
03MAY84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
18MAY84	18.34 (2.38)	0.00 (.)	0.18 (0.11)	6.47 (0.11)
01JUN84	73.08 (28.36)	0.00 (.)	4.37 (3.10)	6.72 (5.37)
13JUN84	94.41 (29.89)	0.00 (.)	0.59 (0.16)	0.14 (0.14)
11JUL84	69.66 (17.99)	0.01 (0.00)	1.41 (0.31)	5.63 (2.91)
26JUL84	245.95 (22.92)	0.00 (.)	1.20 (0.41)	0.00 (.)
01AUG84	36.20 (8.57)	0.02 (0.02)	4.10 (0.55)	5.85 (3.41)
22AUG84	25.51 (3.95)	0.00 (.)	0.90 (0.37)	0.00 (.)
20SEP84	0.11 (0.07)	0.00 (.)	0.16 (0.04)	0.00 (.)
25SEP84	0.12 (0.08)	0.00 (.)	0.08 (0.01)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 10
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
02NOV83	0.00 (.)	0.17 (0.04)	0.01 (0.01)	0.00 (.)
19NOV83	0.00 (.)	0.02 (0.01)	0.00 (.)	0.00 (.)
14MAR84	0.00 (.)	0.01 (0.00)	0.00 (.)	0.00 (.)
18MAY84	47.02 (12.00)	0.00 (.)	0.07 (0.07)	0.00 (.)
02JUN84	8.23 (2.53)	0.00 (.)	0.05 (0.02)	0.50 (0.24)
13JUN84	412.36 (361.39)	0.00 (.)	9.06 (8.61)	0.93 (0.93)
11JUL84	195.39 (15.81)	0.04 (0.02)	2.13 (0.54)	0.00 (0.00)
26JUL84	0.43 (0.25)	0.00 (.)	1.15 (0.63)	219.32 (13.36)
01AUG84	92.64 (3.27)	0.00 (.)	2.01 (0.40)	4.48 (4.05)
22AUG84	31.11 (7.00)	0.00 (.)	0.35 (0.35)	0.98 (0.96)
20SEP84	0.05 (0.03)	0.00 (.)	0.13 (0.03)	0.00 (.)
25SEP84	0.02 (0.01)	0.00 (.)	0.00 (0.00)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 10
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs		Bothidae Eggs		Sciaenidae Eggs		Other Fish Eggs	
02NOV83	0.00	(.)	0.25	(0.02)	0.00	(.)	0.00	(.)
19NOV83	0.00	(.)	0.02	(0.02)	0.12	(0.04)	0.00	(.)
11DEC83	0.00	(.)	0.02	(0.02)	0.00	(.)	0.00	(.)
14MAR84	0.00	(.)	0.06	(0.03)	0.00	(.)	0.00	(.)
18APR84	0.00	(.)	0.22	(0.09)	0.00	(.)	0.00	(.)
02MAY84	0.00	(.)	0.10	(0.05)	0.00	(.)	0.01	(0.01)
03MAY84	0.00	(.)	0.11	(0.04)	0.00	(.)	0.00	(.)
18MAY84	18.27	(2.58)	0.23	(0.14)	0.07	(0.07)	0.00	(.)
13JUN84	14.59	(5.37)	0.00	(.)	1.02	(0.36)	0.00	(.)
11JUL84	186.92	(33.32)	0.00	(.)	4.72	(3.03)	0.00	(0.00)
26JUL84	37.93	(8.16)	0.00	(.)	2.66	(0.92)	0.00	(.)
01AUG84	489.79	(123.06)	0.06	(0.06)	22.60	(7.23)	0.14	(0.09)
22AUG84	14.41	(2.03)	0.00	(.)	4.55	(0.77)	0.00	(.)
20SEP84	0.01	(0.01)	0.00	(.)	0.34	(0.08)	0.00	(.)

FISH EGGS
SUMMARY OF TOWS AT STATION 11
MEAN OF 4 333 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs		Bothidae Eggs		Sciaenidae Eggs		Other Fish Eggs	
29OCT83	0.00	(.)	0.00	(.)	0.06	(.)	0.09	(0.01)
19NOV83	0.00	(.)	0.01	(0.01)	0.03	(.)	0.00	(.)
11DEC83	0.00	(0.00)	0.00	(.)	0.02	(0.01)	0.01	(0.01)
14MAR84	0.00	(.)	0.04	(0.01)	0.03	(.)	0.00	(.)
18APR84	0.00	(.)	0.00	(0.00)	0.03	(.)	0.00	(.)
18MAY84	9.72	(4.05)	0.00	(.)	0.26	(0.21)	0.00	(.)
01JUN84	89.83	(22.10)	0.00	(.)	3.40	(3.48)	0.00	(.)
13JUN84	59.71	(17.51)	0.00	(.)	0.21	(0.13)	0.00	(.)
11JUL84	78.37	(15.01)	0.00	(.)	0.94	(0.15)	0.00	(.)
26JUL84	132.00	(18.62)	0.00	(.)	0.65	(0.34)	16.26	(16.26)
01AUG84	8.98	(3.15)	0.00	(.)	0.25	(0.05)	0.00	(.)
22AUG84	9.02	(0.92)	0.00	(.)	1.01	(0.23)	0.00	(.)
19SEP84	0.19	(0.11)	0.00	(.)	0.75	(0.13)	0.01	(0.01)
25SEP84	0.09	(0.05)	0.00	(.)	1.44	(0.20)	0.00	(.)

FISH EGGS
SUMMARY OF TOWS AT STATION 11
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
29OCT83	0.00 (.)	0.00 (.)	0.25 (0.17)	0.00 (.)
19NOV83	0.00 (.)	0.00 (.)	0.00 (.)	0.09 (0.03)
11DEC83	0.00 (.)	0.06 (0.02)	0.00 (.)	0.00 (.)
14MAR84	0.00 (.)	0.04 (0.01)	0.00 (.)	0.00 (.)
18APR84	0.00 (.)	0.56 (0.11)	0.00 (.)	0.00 (.)
03MAY84	0.00 (.)	0.09 (0.06)	0.16 (0.16)	0.00 (.)
18MAY84	8.64 (3.28)	0.02 (0.01)	0.31 (0.25)	1.22 (0.46)
01JUN84	6.32 (2.15)	0.00 (.)	0.67 (0.23)	0.00 (.)
13JUN84	30.38 (9.82)	0.00 (.)	0.53 (0.20)	0.58 (0.58)
11JUL84	46.90 (10.69)	0.00 (.)	2.86 (0.69)	4.97 (4.96)
26JUL84	24.77 (7.88)	0.00 (.)	5.54 (1.37)	20.43 (9.83)
01AUG84	497.51 (157.58)	0.01 (0.01)	48.01 (18.04)	0.00 (.)
22AUG84	23.72 (2.99)	1.91 (1.14)	5.07 (0.83)	0.00 (.)
19SEP84	0.20 (0.15)	0.00 (.)	0.88 (0.05)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 12
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs		Bothidae Eggs		Sciaenidae Eggs		Other Fish Eggs	
29OCT83	0.00	(.)	0.00	(.)	0.00	(.)	0.02	(0.01)
14MAR84	0.00	(.)	0.01	(0.01)	0.00	(.)	0.00	(.)
18MAY84	51.03	(3.79)	0.02	(0.02)	0.13	(0.08)	0.05	(0.03)
02JUN84	4.30	(0.37)	0.00	(.)	0.46	(0.20)	0.39	(0.38)
13JUN84	29.46	(14.48)	0.00	(.)	0.01	(0.01)	0.00	(0.00)
11JUL84	36.00	(6.56)	0.00	(.)	1.31	(0.20)	1.98	(1.98)
26JUL84	114.85	(10.53)	0.00	(.)	0.85	(0.31)	0.00	(.)
01AUG84	54.93	(3.85)	0.00	(.)	0.69	(0.15)	0.00	(.)
22AUG84	4.37	(1.31)	0.00	(.)	0.01	(0.01)	0.00	(.)
20SEP84	0.12	(0.03)	0.00	(.)	0.21	(0.03)	0.00	(.)
25SEP84	0.04	(0.01)	0.00	(.)	0.52	(0.08)	0.01	(0.01)

FISH EGGS
SUMMARY OF TOWS AT STATION 12
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
29OCT83	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
19NOV83	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
03MAY84	0.00 (.)	0.05 (0.03)	0.00 (.)	0.00 (.)
18MAY84	11.91 (2.40)	0.03 (0.03)	0.01 (0.01)	0.03 (0.02)
02JUN84	2.26 (0.26)	0.00 (.)	0.12 (0.03)	0.00 (.)
13JUN84	41.92 (7.25)	0.00 (.)	0.25 (0.14)	0.01 (0.01)
11JUL84	67.53 (8.05)	0.00 (.)	1.18 (0.34)	0.00 (.)
26JUL84	8.76 (5.24)	0.00 (.)	1.33 (0.73)	8.07 (8.07)
01AUG84	35.35 (19.51)	0.00 (.)	1.20 (0.23)	62.44 (40.23)
22AUG84	17.33 (6.50)	0.00 (.)	0.28 (0.07)	0.00 (.)
20SEP84	0.45 (0.33)	0.00 (.)	0.45 (0.05)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 13
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
29OCT83	0.00 (.)	0.01 (0.00)	0.00 (.)	0.00 (0.00)
18MAY84	74.46 (7.16)	0.00 (.)	0.07 (0.05)	0.00 (.)
01JUN84	19.34 (0.83)	0.00 (.)	0.66 (0.10)	4.11 (1.42)
13JUN84	2.18 (0.44)	0.00 (.)	0.23 (0.04)	0.73 (0.42)
11JUL84	11.26 (3.39)	0.00 (.)	0.45 (0.08)	1.11 (1.11)
26JUL84	12.42 (11.43)	0.00 (.)	0.73 (0.14)	53.12 (20.48)
01AUG84	4.36 (1.62)	0.00 (.)	1.63 (0.65)	51.64 (4.96)
22AUG84	0.34 (0.07)	0.00 (.)	0.00 (.)	0.00 (.)
20SEP84	0.12 (0.04)	0.00 (.)	0.37 (0.15)	0.00 (.)
25SEP84	0.17 (0.06)	0.00 (.)	0.47 (0.07)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 13
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
29OCT83	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
19NOV83	0.00 (.)	0.03 (0.03)	0.00 (.)	0.00 (.)
14MAR84	0.00 (.)	0.06 (0.03)	0.00 (.)	0.00 (.)
18APR84	0.00 (.)	0.04 (0.04)	0.00 (.)	0.00 (.)
03MAY84	0.00 (.)	0.16 (0.08)	0.00 (.)	0.00 (.)
18MAY84	32.92 (12.34)	0.00 (.)	0.22 (0.15)	0.01 (0.01)
13JUN84	6.61 (1.06)	0.00 (.)	0.27 (0.05)	0.00 (.)
11JUL84	42.91 (10.68)	0.00 (.)	0.69 (0.16)	0.00 (.)
26JUL84	47.25 (13.41)	0.00 (.)	2.19 (0.81)	0.00 (.)
01AUG84	143.38 (50.33)	0.00 (.)	4.76 (1.57)	0.00 (.)
22AUG84	2.15 (1.53)	0.00 (.)	0.11 (0.03)	0.00 (.)
20SEP84	0.00 (.)	0.00 (.)	0.67 (0.10)	0.01 (0.01)

FISH EGGS
SUMMARY OF TOWS AT STATION 20
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
18MAY84	16.75 (2.39)	0.00 (.)	0.10 (0.07)	0.02 (0.01)
01JUN84	75.81 (31.89)	0.10 (0.08)	0.57 (0.20)	0.31 (0.28)
13JUN84	6.54 (1.10)	0.00 (.)	0.03 (0.05)	0.00 (0.00)
11JUL84	40.17 (10.51)	0.00 (.)	0.41 (0.2?)	0.00 (.)
26JUL84	97.24 (14.59)	0.00 (.)	0.09 (0.09)	0.01 (0.01)
01AUG84	12.61 (4.63)	0.03 (0.02)	1.55 (0.39)	2.36 (2.36)
22AUG84	1.16 (0.44)	0.00 (.)	0.01 (0.01)	2.35 (0.73)
19SEP84	0.85 (0.41)	0.00 (.)	1.24 (0.12)	0.00 (.)
25SEP84	0.14 (0.06)	0.00 (.)	0.93 (0.07)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 20
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs		Bothidae Eggs		Sciaenidae Eggs		Other Fish Eggs	
03MAY84	0.00	(.)	0.01	(0.01)	0.00	(.)	0.00	(.)
18MAY84	19.57	(8.79)	0.26	(0.14)	2.15	(1.52)	0.00	(.)
01JUN84	24.89	(5.14)	0.00	(.)	1.29	(0.31)	5.21	(1.05)
13JUN84	11.03	(1.66)	0.00	(.)	0.64	(0.14)	0.00	(.)
11JUL84	132.75	(64.97)	0.00	(.)	7.95	(3.68)	19.33	(15.56)
26JUL84	123.10	(55.03)	0.00	(.)	12.12	(4.63)	0.20	(0.20)
01AUG84	279.22	(137.58)	0.16	(0.16)	26.47	(16.14)	0.11	(0.11)
22AUG84	4.63	(1.00)	0.01	(0.01)	9.79	(1.13)	13.73	(1.57)
19SEP84	0.13	(0.08)	0.00	(.)	1.88	(0.23)	0.00	(.)

FISH EGGS
SUMMARY OF TOWS AT STATION 21
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
09MAY84	0.07 (0.01)	0.00 (.)	0.12 (0.05)	0.00 (.)
21MAY84	22.42 (1.64)	0.01 (0.01)	0.01 (0.01)	1.91 (1.91)
02JUN84	19.64 (3.94)	0.00 (0.00)	0.07 (0.05)	0.93 (0.54)
14JUN84	22.02 (2.27)	0.00 (.)	0.09 (0.06)	0.68 (0.27)
12JUL84	75.51 (17.03)	0.00 (.)	0.14 (0.05)	6.22 (6.22)
26JUL84	200.18 (10.83)	0.00 (.)	0.06 (0.06)	0.00 (.)
01AUG84	32.88 (5.82)	0.00 (.)	0.22 (0.14)	0.00 (.)
21AUG84	179.49 (51.86)	0.10 (0.07)	100.38 (54.09)	0.00 (.)
19SEP84	0.45 (0.15)	0.00 (.)	0.79 (0.14)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 21
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

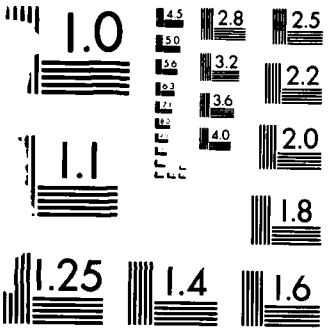
DATE	Engraulidae Eggs		Bothidae Eggs		Sciaenidae Eggs		Other Fish Eggs	
09MAY84	0.00	(.)	0.04	(0.04)	0.04	(0.04)	0.00	(.)
21MAY84	13.99	(1.21)	0.00	(.)	0.45	(0.15)	0.86	(0.86)
14JUN84	6.67	(4.09)	0.00	(.)	0.90	(0.61)	3.51	(2.19)
26JUL84	55.52	(25.76)	0.00	(.)	12.57	(4.70)	1.79	(1.79)
01AUG84	166.73	(73.34)	0.15	(0.15)	18.04	(6.07)	0.00	(.)
12AUG84	45.47	(10.37)	0.00	(.)	6.19	(1.69)	0.00	(.)
21AUG84	107.23	(18.92)	0.39	(0.24)	15.62	(2.20)	0.00	(.)
19SEP84	0.16	(0.16)	0.00	(.)	0.66	(0.07)	0.00	(.)

FISH EGGS
SUMMARY OF TOWS AT STATION 22
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
09MAY84	0.03 (0.00)	0.00 (.)	0.03 (0.00)	0.08 (0.08)
21MAY84	18.17 (5.42)	0.00 (.)	0.10 (0.10)	9.67 (2.66)
02JUN84	10.30 (6.43)	0.00 (.)	0.03 (0.03)	0.31 (0.31)
14JUN84	24.30 (2.63)	0.00 (.)	0.15 (0.15)	0.00 (.)
12JUL84	71.41 (6.39)	0.00 (.)	0.19 (0.04)	0.00 (.)
26JUL84	280.75 (93.56)	0.00 (.)	0.03 (0.03)	2.44 (2.44)
01AUG84	64.36 (12.24)	0.00 (.)	0.14 (0.09)	0.04 (0.03)
21AUG84	233.82 (56.10)	0.06 (0.04)	99.15 (14.53)	0.00 (.)
19SEP84	0.14 (0.04)	0.00 (.)	0.69 (0.14)	0.00 (.)

AD-A165 213 CHARACTERIZATION OF MERO-AND ICHTHYOPLANKTON COMMUNITIES WITHIN THE CHESA..(U) OLD DOMINION UNIV NORFOLK VA APPLIED MARINE RESEARCH LAB A J BUTT ET AL. 3/3

UNCLASSIFIED MAR 85 DACW65-81-C-0051 FFG 6/6 NL



FISH EGGS
SUMMARY OF TOWS AT STATION 22
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs		Bothidae Eggs		Sciaenidae Eggs		Other Fish Eggs	
09MAY84	0.05	(0.02)	0.08	(0.03)	0.04	(0.03)	0.00	(.)
21MAY84	24.02	(3.49)	0.00	(.)	3.89	(3.53)	1.98	(1.98)
02JUN84	13.32	(1.54)	0.00	(.)	0.13	(0.05)	0.01	(0.01)
13JUN84	29.50	(11.08)	0.00	(.)	2.12	(1.18)	0.00	(.)
12JUL84	81.09	(12.33)	0.00	(.)	2.89	(0.67)	0.00	(.)
26JUL84	242.87	(46.88)	0.01	(0.01)	4.60	(1.89)	0.69	(0.23)
01AUG84	322.28	(128.53)	0.00	(.)	24.69	(10.94)	0.01	(0.01)
21AUG84	501.72	(149.82)	0.24	(0.10)	45.11	(19.54)	0.00	(.)
19SEP84	0.37	(0.35)	0.00	(.)	0.54	(0.18)	0.00	(.)

FISH EGGS
SUMMARY OF TOWS AT STATION 23
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs	Bothidae Eggs	Sciaenidae Eggs	Other Fish Eggs
09MAY84	2.05 (0.53)	0.01 (0.01)	0.0[illegible] (0.02)	0.18 (0.04)
21MAY84	21.57 (2.77)	0.00 (.)	0.09 (0.03)	0.03 (0.02)
14JUN84	45.75 (4.04)	0.14 (0.14)	0.11 (0.06)	3.38 (2.60)
12JUL84	18.47 (6.96)	0.00 (.)	0.09 (0.02)	9.08 (5.31)
26JUL84	79.46 (21.10)	0.00 (.)	1.62 (1.17)	33.18 (19.49)
01AUG84	87.75 (13.22)	0.00 (.)	0.85 (0.12)	0.05 (0.03)
21AUG84	59.04 (20.49)	0.00 (.)	0.03 (0.02)	0.00 (.)
20SEP84	0.00 (0.00)	0.00 (.)	0.03 (0.01)	0.00 (.)
26SEP84	0.03 (0.02)	0.00 (.)	0.06 (0.01)	0.00 (.)

FISH EGGS
SUMMARY OF TOWS AT STATION 23
MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Engraulidae Eggs		Bothidae Eggs		Sciaenidae Eggs		Other Fish Eggs	
09MAY84	1.34	(0.26)	0.02	(0.02)	0.04	(0.02)	0.55	(0.26)
21MAY84	17.07	(4.02)	0.00	(.)	0.30	(0.14)	0.01	(0.01)
12JUL84	39.66	(3.60)	0.00	(.)	2.82	(1.12)	0.00	(.)
26JUL84	92.47	(49.01)	0.00	(.)	4.82	(2.23)	0.00	(.)
01AUG84	502.14	(344.10)	0.00	(.)	24.42	(19.72)	0.07	(0.07)
21AUG84	241.44	(56.13)	2.67	(1.38)	2.82	(1.15)	0.00	(.)
20SEP84	0.00	(.)	0.00	(.)	0.23	(0.08)	0.00	(.)

FISHES - 1
SUMMARY OF TOWS AT STATION 1
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
01JUN84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.01 (0.01)
26JUL84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.09 (0.09)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.35 (0.14)
22AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.03 (0.02)
20SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.21 (0.05)
25SEP84	0.00 (.)	0.00 (.)	0.00 (.)	2.31 (1.62)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
19NOV83	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
18MAY84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
11JUL84	0.06 (0.06)	0.00 (.)	0.00 (.)	0.05 (0.05)
26JUL84	0.00 (.)	0.00 (.)	0.05 (0.05)	1.82 (0.88)
01AUG84	0.00 (.)	0.00 (.)	0.08 (0.05)	0.13 (0.13)
22AUG84	0.25 (0.23)	0.00 (.)	0.01 (0.01)	0.08 (0.08)
20SEP84	0.11 (0.06)	0.00 (.)	0.00 (.)	0.01 (0.01)

FISHES - 1
SUMMARY OF TOWS AT STATION 10
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.20 (0.14)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.08 (0.05)
22AUG84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
25SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.21 (0.07)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
26JUL84	0.00 (.)	0.00 (.)	0.04 (0.04)	0.82 (0.48)
01AUG84	0.00 (.)	0.00 (.)	0.00 (0.00)	4.75 (3.50)
20SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)

FISHES - 1
SUMMARY OF TOWS AT STATION 12
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.33 (0.21)
01AUG84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.50 (0.20)
25SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.28 (0.24)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
11JUL84	0.00 (.)	0.00 (.)	0.02 (0.02)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.23 (0.23)
01AUG84	0.05 (0.05)	0.00 (.)	0.00 (.)	0.84 (0.50)
22AUG84	0.02 (0.01)	0.00 (.)	0.00 (.)	0.00 (.)
20SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)

FISHES - 1
SUMMARY OF TOWS AT STATION 13
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
11DEC83	0.00 (.)	0.01 (0.01)	0.00 (.)	0.00 (.)
01JUN84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.26 (0.16)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.19 (0.09)
22AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
25SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.27 (0.22)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
18MAY84	0.00 (.)	0.00 (.)	0.03 (0.02)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	4.23 (0.97)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	1.52 (0.51)
22AUG84	0.02 (0.02)	0.00 (.)	0.00 (.)	0.00 (.)

FISHES - 1
SUMMARY OF TOWS AT STATION 20
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.06 (0.06)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.15 (0.03)
19SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.02 (0.02)
25SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
18MAY84	0.00 (.)	0.00 (.)	0.02 (0.02)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	7.30 (4.17)
01AUG84	0.00 (.)	0.00 (.)	0.06 (0.06)	7.98 (6.71)
22AUG84	0.00 (.)	0.00 (.)	0.15 (0.09)	0.13 (0.13)
19SEP84	0.19 (0.14)	0.00 (.)	0.00 (.)	0.11 (0.11)

FISHES - 1
SUMMARY OF TOWS AT STATION 21
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.55 (0.32)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.34 (0.17)
21AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
19SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.13 (0.05)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
09MAY84	0.00 (.)	0.00 (.)	0.28 (0.28)	0.00 (.)
21MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.17 (0.17)	14.48 (7.09)
01AUG84	0.00 (.)	0.00 (.)	0.11 (0.11)	6.75 (3.40)
21AUG84	0.30 (0.30)	0.38 (0.22)	0.42 (0.26)	0.40 (0.40)
19SEP84	0.00 (.)	0.00 (.)	0.00 (.)	0.44 (0.24)

FISHES - 1
SUMMARY OF TOWS AT STATION 22
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Parallichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
21MAY84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.22 (0.12)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.11 (0.11)
21AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Parallichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
09MAY84	0.00 (.)	0.00 (.)	0.04 (0.04)	0.00 (.)
21MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
02JUN84	0.01 (0.01)	0.00 (.)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	2.75 (1.29)
01AUG84	0.00 (.)	0.00 (.)	0.02 (0.02)	9.83 (5.29)
21AUG84	0.12 (0.10)	0.39 (0.39)	0.00 (.)	0.13 (0.13)
19SEP84	0.05 (0.03)	0.00 (.)	0.00 (.)	0.00 (.)

FISHES - 1
SUMMARY OF TOWS AT STATION 23
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.47 (0.20)
20SEP84	0.00 (.)	0.00 (.)	0.02 (.)	0.06 (0.07)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Etropus microstomus	Paralichthys dentatus	Scophthalmus aquosus	Engraulidae Fry
09MAY84	0.00 (.)	0.00 (.)	0.03 (0.02)	0.00 (.)
21MAY84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	2.64 (1.36)
01AUG84	0.00 (.)	0.00 (.)	0.65 (0.65)	2.68 (2.68)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 1
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
04JAN84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
20SEP84	0.00 (0.00)	0.00 (.)	0.00 (.)	0.00 (.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
04JAN84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
14MAR84	0.00 (.)	0.00 (.)	0.03 (0.03)	0.01 (0.01)
11JUL84	0.05 (0.05)	0.00 (.)	0.00 (.)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.17 (0.17)
01AUG84	0.06 (0.06)	0.00 (.)	0.00 (.)	1.91 (1.13)
22AUG84	0.15 (0.10)	0.00 (.)	0.00 (.)	1.14 (0.45)
20SEP84	0.53 (0.18)	0.00 (.)	0.00 (.)	0.05 (0.04)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 10
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
02FEB84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
19FEB84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
22AUG84	0.00 (0.00)	0.00 (.)	0.00 (.)	0.01 (0.01)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
19NOV83	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
14MAR84	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
11JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
26JUL84	0.00 (.)	0.00 (.)	0.10 (0.06)	0.24 (0.19)
01AUG84	0.15 (0.13)	0.00 (.)	0.00 (.)	2.42 (0.92)
22AUG84	0.78 (0.30)	0.00 (.)	0.00 (.)	0.00 (.)
20SEP84	0.10 (0.06)	0.00 (.)	0.00 (.)	0.03 (0.01)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 11
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
11DEC83	0.00 (.)	0.00 (.)	0.00 (0.00)	0.00 (.)
04JAN84	0.00 (.)	0.00 (.)	0.02 (0.01)	0.00 (0.00)
26JUL84	0.00 (.)	0.00 (.)	0.07 (0.06)	0.00 (.)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
22AUG84	0.11 (0.09)	0.00 (.)	0.00 (.)	0.01 (0.00)
25SEP84	0.01 (0.01)	0.00 (.)	0.00 (.)	0.00 (.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.05 (0.05)	0.03 (0.03)
01AUG84	0.64 (0.62)	0.00 (.)	0.00 (.)	0.00 (.)
22AUG84	0.17 (0.06)	0.25 (0.15)	0.00 (.)	0.70 (0.42)
19SEP84	0.21 (0.10)	0.00 (.)	0.00 (.)	0.03 (0.02)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 12
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.01 (0.01)
22AUG84	0.00 (0.00)	0.00 (.)	0.00 (.)	0.00 (.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.50 (0.50)	1.74 (1.32)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	2.02 (0.89)
22AUG84	0.01 (0.01)	0.00 (.)	0.00 (.)	0.15 (0.11)
20SEP84	0.03 (0.02)	0.00 (.)	0.00 (.)	0.00 (.)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 13
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.03 (0.03)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.25 (0.10)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
01AUG84	0.47 (0.24)	0.00 (.)	0.33 (0.33)	3.43 (2.09)
22AUG84	0.00 (.)	0.00 (.)	0.05 (0.04)	0.16 (0.16)
20SEP84	0.04 (0.02)	0.00 (.)	0.00 (.)	0.00 (0.00)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 20
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
01JUN84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.[illegible] (.)	0.02 (0.02)
22AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
19SEP84	0.02 (0.01)	0.00 (.)	0.00 (.)	0.00 (.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
03MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
01JUN84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
11JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.25 (0.11)
01AUG84	0.09 (0.05)	0.00 (.)	0.00 (.)	0.69 (0.29)
22AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.58 (0.17)
19SEP84	0.72 (0.21)	0.00 (.)	0.00 (.)	0.01 (0.01)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 21
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
21MAY84	0.00 (.)	0.00 (.)	0.01 (0.01)	0.00 (.)
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.03 (0.03)
01AUG84	0.01 (0.01)	0.00 (.)	0.00 (.)	0.00 (.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.16 (0.16)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.04 (0.04)
21AUG84	0.24 (0.24)	0.00 (.)	0.00 (.)	1.21 (0.17)
19SEP84	0.71 (0.29)	0.01 (0.01)	0.00 (.)	0.02 (0.02)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 22
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.06 (0.06)
01AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.03 (0.03)
21AUG84	0.00 (.)	0.00 (.)	0.00 (.)	0.02 (0.01)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.03 (0.03)
21AUG84	0.66 (0.38)	0.00 (.)	0.00 (.)	1.00 (0.54)
19SEP84	0.07 (0.07)	0.0' (.)	0.00 (.)	0.00 (.)

SCIAENIDS AND OTHER FISH
SUMMARY OF TOWS AT STATION 23
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
12JUL84	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (0.00)
26SEP84	0.00 (0.00)	0.00 (.)	0.00 (.)	0.00 (.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Cynoscion regalis	Leiostomus xanthurus	Ammodytes hexapterus	Anchoa mitchelli
26JUL84	0.00 (.)	0.00 (.)	0.00 (.)	1.01 (0.12)
01AUG84	0.43 (0.30)	0.00 (.)	0.00 (.)	0.19 (0.14)
21AUG84	0.09 (0.05)	0.00 (.)	0.00 (.)	0.67 (0.21)
20SEP84	0.18 (0.18)	0.00 (.)	0.00 (.)	0.00 (.)

MISCELLANEOUS PHYLA
SUMMARY OF TOWS AT STATION 1
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
01JUN84	9.69	(6.59)	0.00	(.)
26JUL84	0.03	(0.03)	0.00	(.)
01AUG84	0.74	(0.11)	0.00	(.)
22AUG84	0.34	(0.34)	0.02	(0.01)
20SEP84	1.13	(0.43)	0.01	(0.01)
25SEP84	0.60	(0.14)	0.00	(0.00)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
03OCT83	3.39	(2.52)	0.00	(.)
13OCT83	0.37	(0.08)	0.00	(.)
01NOV83	0.01	(0.01)	0.00	(.)
19NOV83	102.90	(29.11)	0.07	(0.07)
11DEC83	1.18	(0.22)	0.00	(.)
14MAR84	0.01	(0.01)	0.02	(0.02)
18MAY84	9.28	(5.09)	0.00	(.)
01JUN84	41.63	(17.24)	0.00	(.)
13JUN84	1.66	(0.96)	0.17	(0.17)
11JUL84	10.68	(10.41)	0.19	(0.19)
26JUL84	21.11	(11.22)	0.25	(0.16)
01AUG84	14.87	(0.70)	0.00	(.)
22AUG84	65.70	(19.88)	6.06	(0.90)
20SEP84	60.48	(8.16)	0.13	(0.06)

MISCELLANEOUS PHYLA
SUMMARY OF TOWS AT STATION 10
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
19NOV83	0.12	(0.03)	0.00	(.)
19FEB84	0.01	(0.01)	0.00	(.)
18MAY84	0.04	(0.04)	0.00	(.)
02JUN84	0.01	(0.01)	0.00	(.)
01AUG84	0.19	(0.03)	0.00	(.)
20SEP84	0.64	(0.43)	0.00	(.)
25SEP84	0.12	(0.04)	0.00	(.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
02NOV83	0.05	(0.01)	0.00	(.)
19NOV83	56.87	(8.18)	0.00	(.)
11DEC83	5.17	(2.16)	0.00	(.)
14MAR84	0.00	(.)	0.06	(0.03)
18MAY84	0.21	(0.21)	0.00	(.)
13JUN84	0.04	(0.04)	0.00	(.)
11JUL84	0.16	(0.05)	0.36	(0.09)
26JUL84	7.12	(1.65)	0.04	(0.02)
01AUG84	16.55	(8.42)	0.09	(0.09)
22AUG84	26.63	(6.01)	8.82	(3.44)
20SEP84	3.54	(0.57)	0.26	(0.04)

MISCELLANEOUS PHYLA
SUMMARY OF TOWS AT STATION 11
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
19NOV83	0.04	(0.03)	0.00	(.)
11DEC83	0.01	(0.01)	0.00	(0.00)
18MAY84	0.03	(0.02)	0.00	(.)
01JUN84	42.95	(15.77)	0.00	(.)
11JUL84	0.01	(0.01)	0.00	(.)
26JUL84	0.50	(0.13)	0.00	(.)
01AUG84	0.24	(0.06)	0.00	(.)
22AUG84	0.16	(0.06)	0.00	(.)
19SEP84	54.64	(8.68)	0.00	(.)
25SEP84	19.28	(6.41)	0.00	(.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
19NOV83	56.44	(11.79)	0.00	(.)
11DEC83	0.86	(0.27)	0.00	(.)
14MAR84	0.00	(.)	0.02	(0.01)
03MAY84	0.00	(.)	0.03	(0.03)
18MAY84	56.89	(16.65)	0.00	(.)
01JUN84	19.10	(6.34)	0.00	(.)
13JUN84	0.19	(0.19)	0.00	(.)
11JUL84	0.20	(0.12)	0.00	(.)
26JUL84	15.93	(6.74)	0.22	(0.13)
01AUG84	310.22	(220.65)	0.00	(.)
22AUG84	80.59	(21.53)	3.40	(0.68)
19SEP84	42.97	(10.52)	0.00	(.)

MISCELLANEOUS PHYLA
SUMMARY OF TOWS AT STATION 12
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
29OCT83	0.00	(0.00)	0.00	(.)
19NOV83	0.24	(0.12)	0.00	(.)
18MAY84	0.02	(0.02)	0.00	(.)
02JUN84	0.03	(0.01)	0.00	(.)
13JUN84	0.00	(0.00)	0.00	(.)
11JUL84	0.02	(0.02)	0.00	(.)
26JUL84	0.04	(0.04)	0.00	(.)
01AUG84	1.83	(0.37)	0.00	(.)
22AUG84	0.05	(0.02)	0.00	(.)
20SEP84	0.48	(0.11)	0.00	(.)
25SEP84	1.26	(0.30)	0.01	(0.01)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
29OCT83	0.01	(0.01)	0.00	(.)
19NOV83	40.68	(10.50)	0.00	(.)
11DEC83	0.04	(0.04)	0.00	(.)
18MAY84	0.40	(0.16)	0.00	(.)
02JUN84	0.04	(0.03)	0.00	(.)
13JUN84	0.01	(0.01)	0.00	(.)
11JUL84	0.01	(0.01)	0.00	(.)
26JUL84	52.45	(30.66)	0.04	(0.04)
01AUG84	5.09	(0.83)	0.12	(0.05)
22AUG84	0.59	(0.17)	0.09	(0.05)
20SEP84	2.93	(0.35)	0.43	(0.16)

MISCELLANEOUS PHYLA
SUMMARY OF TOWS AT STATION 13
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
19NOV83	0.09	(0.04)	0.00	(.)
19FEB84	0.01	(0.01)	0.00	(.)
18MAY84	0.01	(0.01)	0.00	(.)
01JUN84	0.18	(0.07)	0.00	(.)
26JUL84	0.08	(0.03)	0.00	(.)
01AUG84	0.92	(0.34)	0.00	(.)
22AUG84	0.02	(0.01)	0.00	(.)
20SEP84	0.05	(0.02)	0.00	(.)
25SEP84	0.49	(0.14)	0.01	(0.00)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
19NOV83	5.15	(1.75)	0.00	(.)
11DEC83	1.01	(0.65)	0.00	(.)
18MAY84	0.71	(0.71)	0.00	(.)
13JUN84	0.02	(0.02)	0.00	(.)
26JUL84	42.53	(10.37)	0.11	(0.11)
01AUG84	6.09	(1.77)	0.08	(0.06)
22AUG84	0.00	(.)	0.03	(0.02)
20SEP84	0.76	(0.26)	0.08	(0.03)

MISCELLANEOUS PHYLA
SUMMARY OF TOWS AT STATION 20
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
18MAY84	0.02	(0.02)	0.00	(.)
01JUN84	1.90	(0.61)	0.00	(.)
13JUN84	0.00	(0.00)	0.00	(.)
26JUL84	0.18	(0.11)	0.01	(0.01)
01AUG84	0.65	(0.14)	0.00	(0.00)
22AUG84	0.00	(0.00)	0.00	(.)
19SEP84	30.18	(3.99)	0.00	(.)
25SEP84	29.10	(11.00)	0.00	(.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
03MAY84	0.00	(.)	0.09	(0.09)
18MAY84	2.61	(2.61)	0.00	(.)
01JUN84	4.71	(0.89)	0.00	(.)
13JUN84	0.07	(0.05)	0.02	(0.02)
11JUL84	0.30	(0.14)	0.11	(0.11)
26JUL84	35.77	(11.63)	0.00	(.)
01AUG84	52.92	(23.51)	0.06	(0.06)
22AUG84	64.35	(39.19)	1.99	(0.59)
19SEP84	52.65	(8.69)	0.00	(.)

MISCELLANEOUS PHYLA
SUMMARY OF TOWS AT STATION 21
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
02JUN84	0.07	(0.04)	0.00	(.)
26JUL84	0.57	(0.24)	0.00	(.)
01AUG84	2.34	(0.50)	0.07	(0.07)
21AUG84	0.98	(0.17)	0.09	(0.08)
19SEP84	11.16	(2.49)	0.01	(0.01)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
09MAY84	0.06	(0.06)	0.00	(.)
21MAY84	7.64	(3.18)	0.00	(.)
14JUN84	0.65	(0.60)	0.07	(0.04)
26JUL84	23.40	(17.06)	0.00	(.)
01AUG84	364.59	(172.52)	0.00	(.)
12AUG84	0.34	(0.14)	0.05	(0.04)
21AUG84	237.81	(53.01)	0.71	(0.35)
19SEP84	18.79	(5.35)	0.00	(.)

MISCELLANEOUS PHYLA
SUMMARY OF TOWS AT STATION 22
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
09MAY84	0.02	(0.02)	0.00	(.)
02JUN84	0.94	(0.89)	0.00	(.)
12JUL84	0.01	(0.01)	0.00	(.)
26JUL84	1.27	(0.98)	0.00	(.)
01AUG84	2.45	(0.18)	0.00	(.)
21AUG84	4.16	(0.86)	0.10	(0.10)
19SEP84	5.57	(3.17)	0.00	(.)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
09MAY84	0.49	(0.49)	0.00	(.)
21MAY84	0.64	(0.46)	0.00	(.)
02JUN84	0.32	(0.21)	0.00	(.)
13JUN84	0.39	(0.32)	0.05	(0.04)
12JUL84	0.61	(0.24)	0.18	(0.18)
26JUL84	16.68	(6.79)	0.04	(0.03)
01AUG84	351.26	(171.47)	0.04	(0.04)
21AUG84	156.38	(33.91)	0.03	(0.03)
19SEP84	80.93	(22.05)	0.00	(.)

MISCELLANEOUS PHYLA
SUMMARY OF TOWS AT STATION 23
MEAN OF 4 353 u NEUSTON TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
12JUL84	0.07	(0.03)	0.00	(.)
26JUL84	0.10	(0.09)	0.00	(.)
01AUG84	2.05	(0.67)	0.00	(.)
21AUG84	0.12	(0.05)	0.01	(0.01)
20SEP84	15.55	(3.10)	0.00	(0.00)
26SEP84	2.63	(0.28)	0.00	(0.00)

MEAN OF 4 353 u OBLIQUE TOWS IN NOS PER METER CUBED (STD ERROR)

DATE	Larvacea		Phoronida	
09MAY84	0.01	(0.01)	0.00	(.)
21MAY84	3.90	(2.23)	0.00	(.)
12JUL84	0.19	(0.11)	0.00	(.)
26JUL84	3.41	(0.68)	0.00	(.)
01AUG84	21.21	(13.64)	0.09	(0.09)
21AUG84	9.76	(1.94)	10.58	(4.07)
20SEP84	127.22	(42.52)	0.18	(0.08)

Table A5. Results of multiple regression analysis of month to month, geographic and tow type effects on the major PCA factors. Only those values which were significant at the α=0.01 level were selected. The direction of the effect (+ or -), the contributions to R^2 and the P values are indicated.

Dependent Variables	Independent Variables (R^2;P)			
	Fall	Winter	Spring	Summer
PCA1	Neuston(-;0.10;p<0.001)	Neuston(-;0.21;p<0.001)	Month^2(+;0.05;p<0.001) NS(-;0.02;p<0.001)	Month^{2}by neuston(-;0.07;p<0.001) Month^2(-;0.03;p<0.001) Month(+;0.05;p<0.001) NS by WE(+;0.03;p<0.001)
PCA2	Neuston(-;0.10;p<0.001)	Neuston(+;0.21;p<0.001)	Month^{2}by neuston (-;0.03;p<0.001) NS by neuston (+;0.04;p<0.001)	NS by WE(+;0.05;p<0.001) NS by WE by neuston (-;0.06;p<0.001) Month(+;0.03;p<0.001) Neuston(+;0.03;p<0.001)
PCA3	Neuston(+;0.10;p<0.001)	Neuston(+;0.21;p<0.001)	-	WE(+;0.03;p<0.001)
PCA4	Neuston(-;0.14;p<0.001)	Neuston(-;0.21;p<0.001)	Neuston(-;0.20;p<0.001) NS(-;0.03;p<0.001)	WE by neuston(-;0.04;p<0.001) Month^2(+;0.05;p<0.001) Month(-;0.03;p<0.003)
PCA5	Month by neuston (-;0.09;p<0.001)	Neuston(-;0.21;p<0.001)	WE(+;0.03;p<0.007) WE by neuston (-;0.03;p<0.006)	NS by WE(-;0.03;p<0.001) Month^2(-;0.03;p<0.001)
PCA6	Neuston(+;0.12;p<0.001)	Neuston(-;0.19;p<0.001)	NS(-;0.03;p<0.001) Month^2(+;0.03;p<0.001)	Month^2(+;0.03;p<0.001) Month(-;0.03;p<0.001) Neuston(+;0.08;p<0.001)

END

DTIC

FILMED

4-86